

THE ASTROPHYSICAL JOURNAL
INDEX TO VOLUME 307, PARTS 1 AND 2
1986 AUGUST 1 AND AUGUST 15

- AARONSON, MARC. High-Precision Radial Velocities for Faint Giants. I. MMT Echelle Results for Globular Cluster Stars. *Ruth C. Peterson, Edward W. Olszewski, and Marc Aaronson.* **307**, 139, 96-E5 (1986)
- ADAIR, JOE. Optical Flashes in Perseus. *Bill Katz, Dan Driscoll, Kai Millyard, Bruce Waters, Mark Zalcik, Joe Adair, Andreas Gada, Wayne Hayes, Richard Kelsch, Richard McWatters, Richard Rokosz, John Zehethofer, Alex Fullerton, Ron Lyons, and Marshall McCall.* **307**, L33, 100-C9 (1986)
- AGUILAR, LUIS A. The Density Profiles of Tidally Stripped Galaxies. *Luis A. Aguilar and Simon D. M. White.* **307**, 97, 96-A9 (1986)
- ANTIOCHOS, SPIRO K. On the Dividing Line for Stellar Coronae. *Spiro K. Antiochos, Bernhard M. Haisch, and Robert A. Stern.* **307**, L55, 107-C1 (1986)
- ARAI, KENZO. The $^{14}\text{N}(e^-, p)^{14}\text{C}(\alpha, \gamma)^{18}\text{O}$ Reaction and Helium Flashes in Accreting Helium White Dwarfs. *Masa-aki Hashimoto, Ken'ichi Nomoto, Kenzo Arai, and Keisuke Kaminisi.* **307**, 687, 104-D9 (1986)
- ARNETT, W. DAVID. Carbon Combustion Supernovae: Numerical Studies of the Final Evolution of Degenerate Carbon-Oxygen Cores. *Ewald Müller and W. David Arnett.* **307**, 619, 103-F8 (1986)
- Supernova Colors and Systematic Flux Dilution. *Albert J. Fu and W. David Arnett.* **307**, 726, 105-A1 (1986)
- EVERY, L. W. The C_2H_2 $2_{20}-2_{11}$ Transition: Absorption in Cold Dark Clouds. *H. E. Matthews, S. C. Madden, L. W. Avery, and W. M. Irvine.* **307**, L69, 107-D6 (1986)
- BALL, ROGER. Distribution and Kinematics of Neutral Hydrogen in the Barred Spiral Galaxy NGC 3359. *Roger Ball.* **307**, 453, 101-E11 (1986)
- BALONEK, THOMAS J. Observational Constraints on Bending the Wide-Angle Tailed Radio Galaxy 1919 + 479. *Jack O. Burns, Christopher P. O'Dea, Stephen A. Gregory, and Thomas J. Balonek.* **307**, 73, 95-F9 (1986)
- BANIA, T. M. Clump 1: An Unusual Molecular Cloud Complex near the Galactic Center. *T. M. Bania, Antony A. Stark, and G. M. Heiligman.* **307**, 350, 98-G12 (1986)
- BARKER, F. C. A Comment on the $^7\text{Be}(\rho, \gamma)^8\text{B}$ Cross Section and the Solar Neutrino Problem. *F. C. Barker and R. H. Spear.* **307**, 847, 106-C3 (1986)
- BARNES, THOMAS G., III. On the Absolute Magnitudes of RR Lyrae Stars. *Thomas G. Barnes III and Suzanne L. Hawley.* **307**, L9, 100-A12 (1986)
- BASTIEN, PIERRE. Circular Polarization in T Tauri Stars. *Raymond Nadeau and Pierre Bastien.* **307**, L5, 100-A8 (1986)
- BÄUERLE, G. G. A. High-Frequency Perturbations and Gravitational Collapse in Gravity Theory Coupled with a Higgs Field. *R. J. Slagter and G. G. A. Bäuerle.* **307**, 20, 95-B12 (1986)
- BEAVERS, W. I. E. W. Fick Observatory Stellar Radial Velocity Measurements. I. 1976-1984 (Abstract of Paper in 1986 September Suppl.). *W. I. Beavers and J. J. Eitter.* **307**, 870, 106-E4 (1986)
- BECKLIN, E. E. The 2 Micron Spectrum of NGC 6240: Evidence for More than a Starburst. *D. L. DePoy, E. E. Becklin, and C. G. Wynn-Williams.* **307**, 116, 96-C10 (1986)
- BEICHMAN, C. A. Candidate Solar-Type Protostars in Nearby Molecular Cloud Cores. C. A. Beichman, P. C. Myers, J. P. Emerson, S. Harris, R. Mathieu, P. J. Benson, and R. E. Jennings. **307**, 337, 98-F13 (1986)
- Extended Far-Infrared Emission Associated with Mass Outflows from Young Stars: L1551 IRS 5. *S. Edwards, S. E. Strom, R. L. Snell, T. H. Jarrett, C. A. Beichman, and K. M. Strom.* **307**, L65, 107-C10 (1986)
- BELL, R. A. Analysis of Four F Subdwarfs Used as Spectrophotometric Standards. *R. A. Bell and J. B. Oke.* **307**, 253, 97-G1 (1986)
- Mass Functions for Globular Cluster Main Sequences Based on CCD Photometry and Stellar Models. *Robert D. McClure, Don A. Vandenberg, Graeme H. Smith, Gregory G. Fahlgren, Harvey B. Richer, James E. Hesser, William E. Harris, Peter B. Stetson, and R. A. Bell.* **307**, L49, 107-B10 (1986)
- BENSON, P. J. Candidate Solar-Type Protostars in Nearby Molecular Cloud Cores. C. A. Beichman, P. C. Myers, J. P. Emerson, S. Harris, R. Mathieu, P. J. Benson, and R. E. Jennings. **307**, 337, 98-F13 (1986)
- BERTOUT, CLAUDE. CO Line Formation in Bipolar Flows. I. Accelerated Outflows. *Sylvie Cabrit and Claude Bertout.* **307**, 313, 98-D12 (1986)
- BETZ, A. L. Observations of Neutral Atomic Carbon at 809 GHz. *J. Zmuidzinas, A. L. Betz, and D. M. Goldhaber.* **307**, L75, 107-D11 (1986)
- BIEGING, J. H. VLA Maps of Formaldehyde Absorption toward NGC 2024. *Richard M. Crutcher, C. Henkel, T. L. Wilson, K. J. Johnston, and J. H. Bieging.* **307**, 302, 98-C12 (1986)
- BLACK, JOHN H. Detection of the (3,0) Phillips Band of Interstellar C_2 toward Zeta Ophiuchi. *Ewine F. van Dishoeck and John H. Black.* **307**, 332, 98-F8 (1986)
- Comprehensive Models of Diffuse Interstellar Clouds: Physical Conditions and Molecular Abundances (Abstract of Paper in 1986 September Suppl.). *Ewine F. van Dishoeck and John H. Black.* **307**, 869, 106-E3 (1986)
- BLAIR, D. G. The Evolution of Radio Pulsars. *B. N. Candy and D. G. Blair.* **307**, 535, 102-G1 (1986)
- BOKSENBURG, A. Simultaneous EXOSAT and IUE Observations of Fairall 9: Short and Long Term Variability. *M. Morini, L. Scarsi, D. Molteni, M. Salvati, G. C. Perola, L. Piro, G. Simari, A. Boksenberg, M. V. Penston, M. A. J. Snijders, G. E. Bromage, J. Clavel, A. Elvius, and M. H. Ulrich.* **307**, 486, 102-A10 (1986)
- BORIS, JAY P. Response of an Emerging Flux Tube to a Current-driven Instability. *Judith T. Karpen and Jay P. Boris.* **307**, 826, 106-A7 (1986)
- BOYNTON, P. E. Vela X-1 Pulse Timing. I. Determination of the Neutron Star Orbit. *P. E. Boynton, J. E. Deeter, F. K. Lamb, and G. Zylstra.* **307**, 545, 103-A1 (1986)
- BROMAGE, G. E. Simultaneous EXOSAT and IUE Observations of Fairall 9: Short and Long Term Variability. *M. Morini, L. Scarsi, D. Molteni, M. Salvati, G. C. Perola, L. Piro, G. Simari, A. Boksenberg, M. V. Penston, M. A. J. Snijders, G. E. Bromage, J. Clavel, A. Elvius, and M. H. Ulrich.* **307**, 486, 102-A10 (1986)
- BROWN, J. M. Laboratory Measurement of the Rotational Spectrum of the OH Radical with Tunable Far-Infrared Radiation. *J. M. Brown, L. R. Zink, D. A. Jennings, K. M. Evenson, A. Hinz, and I. G. Nolt.* **307**, 410, 99-E6 (1986)
- BROWN, P. J. F. A Model Atmosphere Analysis of the Faint Early-Type Halo Star PHL 346. *F. P. Keenan, D. J. Lennon, P. J. F. Brown, and P. L. Dufton.* **307**, 694, 104-E2 (1986)
- BRUENN, STEPHEN W. A Comparison of Recent Numerical Calculations of Stellar Core Collapse (Abstract of Paper in 1986 September Suppl.). *Stephen W. Bruenn.* **307**, 868, 106-E2 (1986)
- BRUZUAL A., GUSTAVO. Self-regulated Cooling Flows in Elliptical Galaxies and in Cluster Cores: Is Exclusively Low Mass Star Formation Really Necessary? *Joseph Silk, S. Djorgovski, Rosemary F. G. Wyse, and Gustavo Bruzual A.* **307**, 415, 101-C1 (1986)
- BUCHLER, J. R. Fourier Analysis of the Light Curves of the RR Lyrae Stars in the Globular Clusters M15, NGC 6171, and NGC 6723. *G. Kovács, I. Shlosman, and J. R. Buchler.* **307**, 593, 103-D7 (1986)
- BURNS, JACK O. Observational Constraints on Bending the Wide-Angle Tailed Radio Galaxy 1919 + 479. *Jack O. Burns, Christopher P. O'Dea, Stephen A. Gregory, and Thomas J. Balonek.* **307**, 73, 95-F9 (1986)
- BURROWS, ADAM. The Birth of Neutron Stars. *Adam Burrows and James M. Lattimer.* **307**, 178, 97-A10 (1986)
- CABRIT, SYLVIE. CO Line Formation in Bipolar Flows. I. Accelerated Outflows. *Sylvie Cabrit and Claude Bertout.* **307**, 313, 98-D12 (1986)
- CAMPBELL, BRUCE. Strong Cyanogen Stars: The Result of Binary Coalescence? *Bruce Campbell.* **307**, 750, 105-B11 (1986)

- CANDY, B. N. The Evolution of Radio Pulsars. *B. N. Candy and D. G. Blair*. **307**, 535, 102-G1 (1986)
- CANIZARES, C. R. High-Resolution X-Ray Spectroscopic Evidence on Nonequilibrium Conditions in the Cygnus Loop. *P. W. Vedder, C. R. Canizares, T. H. Markert, and A. K. Pradhan*. **307**, 269, 98-A3 (1986)
- CANTÓ, JORGE. Ammonia Observations of Regions with Molecular Outflows. *José M. Torrelles, Paul T. P. Ho, James M. Moran, Luis F. Rodríguez, and Jorge Cantó*. **307**, 787, 105-E9 (1986)
- CARGILL, P. J. The Energy Balance of Plasmoids in the Solar Atmosphere. *P. J. Cargill and G. W. Pneuman*. **307**, 820, 106-A1 (1986)
- CASÉ, MICHEL. On the Production of ^{26}Al by Wolf-Rayet Stars: Galactic Yield and Gamma-Ray Line Emissivity. *Nikos Prantzos and Michel Casé*. **307**, 324, 98-E14 (1986)
- CHAFFEE, FEDERIC H., JR. C IV Absorption Systems in QSO Spectra: Is the Character of Systems with $z_{\text{abs}} \approx z_{\text{em}}$ Different from Those with $z_{\text{abs}} \ll z_{\text{em}}$? *Craig B. Foltz, Ray J. Weymann, Bradley M. Peterson, Light Sun, Matthew A. Malkan, and Federic H. Chaffee, Jr.* **307**, 504, 102-C1 (1986)
- CHAN, KWING L. Turbulent Compressible Convection in a Deep Atmosphere. III. Tests on the Validity and Limitation of the Numerical Approach. *Kwing L. Chan and S. Sofia*. **307**, 222, 97-D12 (1986)
- CHRISTIAN, CAROL A. The Main-Sequence Color-Magnitude Diagram of M92. *J. N. Heasley and Carol A. Christian*. **307**, 738, 105-A13 (1986)
- CHRISTODOULOU, DIMITRIS M. What Warped Disks Can Tell Us about Galaxy Halos and Gravity. *Dimitris M. Christodoulou and Joel E. Tohline*. **307**, 449, 101-E7 (1986)
- CLAVEL, J. Simultaneous EXOSAT and IUE Observations of Fairall 9: Short and Long Term Variability. *M. Morini, L. Scarsi, D. Molteni, M. Salvati, G. C. Perola, L. Piro, G. Simari, A. Boksenberg, M. V. Penston, M. A. J. Snijders, G. E. Bromage, J. Clavel, A. Elvius, and M. H. Ulrich*. **307**, 486, 102-A10 (1986)
- CLAYTON, DONALD D. Secondary Metallicity in Analytic Models of Chemical Evolution of Galaxies. *Donald D. Clayton and Irini Pantelaki*. **307**, 441, 101-D13 (1986)
- COHEN, MARTIN. Optical Spectroscopy of HH-Exciting Stars from Scattered Light Continua. *Martin Cohen, Michael A. Dopita, and Richard D. Schwartz*. **307**, L21, 100-B8 (1986)
- CORDES, J. M. Multiple Imaging of Pulsars by Refraction in the Interstellar Medium. *J. M. Cordes and A. Wolszczan*. **307**, L27, 100-B13 (1986)
- CRAIG, I. J. D. Quasi-steady Mass Flows in Coronal Loops. *I. J. D. Craig and A. N. McClymont*. **307**, 367, 99-B6 (1986)
- CRUTCHER, RICHARD M. VLA Maps of Formaldehyde Absorption toward NGC 2024. *Richard M. Crutcher, C. Henkel, T. L. Wilson, K. J. Johnston, and J. H. Bieging*. **307**, 302, 98-C12 (1986)
- DADHICH, N. High Efficiency of the Penrose Process of Energy Extraction from Rotating Black Holes Immersed in Electromagnetic Fields. *S. Parthasarathy, S. M. Wagh, S. V. Dhurandhar, and N. Dadhich*. **307**, 38, 95-D2 (1986)
- DAVIS, SUMNER P. Oscillator Strengths of the CN Red System: Erratum. *Sumner P. Davis, Dan Shortenhaus, Glenn Stark, Rolf Engelman, Jr., John G. Phillips, and Robert P. Hubbard*. **307**, 414, 99-E10 (1986) (Orig. paper in **303**, 892, 52-D8)
- DEETER, J. E. Vela X-1 Pulse Timing. I. Determination of the Neutron Star Orbit. *P. E. Boynton, J. E. Deeter, F. K. Lamb, and G. Zylstra*. **307**, 545, 103-A1 (1986)
- DEGUCHI, SHUJI. Diffraction in Gravitational Lensing for Compact Objects of Low Mass. *Shuji Deguchi and William D. Watson*. **307**, 30, 95-C8 (1986)
- DE JAGER, O. C. Pulsed Very High Energy Gamma Rays from the COS B Source 2CG 006 - 00. *B. C. Raubenheimer, A. R. North, O. C. De Jager, G. van Urk, and A. J. van Tonder*. **307**, L43, 107-B5 (1986)
- DEPOY, D. L. The 2 Micron Spectrum of NGC 6240: Evidence for More than a Starburst. *D. L. Depoy, E. E. Becklin, and C. G. Wynn-Williams*. **307**, 116, 96-C10 (1986)
- DERMER, CHARLES D. Binary Collision Rates of Relativistic Thermal Plasmas. II. Spectra. *Charles D. Dermer*. **307**, 47, 95-D11 (1986)
- DEWDNEY, P. E. The H II Region Surrounding LkH 101 and Small-Scale Structure in the Nearby Atomic Hydrogen. *P. E. Dewdney and R. S. Roger*. **307**, 275, 98-A9 (1986)
- DE YOUNG, DAVID S. Mass Entrainment in Astrophysical Jets. *David S. De Young*. **307**, 62, 95-E12 (1986)
- DHURANDHAR, S. V. High Efficiency of the Penrose Process of Energy Extraction from Rotating Black Holes Immersed in Electromagnetic Fields. *S. Parthasarathy, S. M. Wagh, S. V. Dhurandhar, and N. Dadhich*. **307**, 38, 95-D2 (1986)
- DJORGOWSKI, S. Self-regulated Cooling Flows in Elliptical Galaxies and in Cluster Cores: Is Exclusively Low Mass Star Formation Really Necessary? *Joseph Silk, S. Djorgowski, Rosemary F. G. Wyse, and Gustavo Bruzual A.* **307**, 415, 101-C1 (1986)
- DOHERTY, L. R. On the Polarization of Alpha Orionis. *L. R. Doherty*. **307**, 261, 97-G9 (1986)
- DOPITA, M. A. Theoretical Models for H II Regions. II. The Extragalactic H II Region Abundance Sequence. *M. A. Dopita and I. N. Evans*. **307**, 431, 101-D3 (1986)
- DOPITA, MICHAEL A. Optical Spectroscopy of HH-Exciting Stars from Scattered Light Continua. *Martin Cohen, Michael A. Dopita, and Richard D. Schwartz*. **307**, L21, 100-B8 (1986)
- DOWNES, RONALD A. The Space Density of Classical Novae. *Ronald A. Downes*. **307**, 170, 97-A1 (1986)
- DOWNS, G. S. JPL Pulsar Timing Observations. IV. Excess Phase Noise (Abstract of Paper in 1986 September Suppl.). *G. S. Downs and J. Krause-Polstorff*. **307**, 869, 106-E3 (1986)
- DRISCOLL, DAN. Optical Flashes in Perseus. *Bill Katz, Dan Driscoll, Kai Millyard, Bruce Waters, Mark Zalcik, Joe Adair, Andreas Gada, Wayne Hayes, Richard Kelsch, Richard McWatters, Richard Rokosz, John Zehethofer, Alex Fullerton, Ron Lyons, and Marshall McCall*. **307**, L33, 100-C9 (1986)
- DUFTON, P. L. A Model Atmosphere Analysis of the Faint Early-Type Halo Star PHL 346. *F. P. Keenan, D. J. Lennon, P. J. F. Brown, and P. L. Dufton*. **307**, 694, 104-E2 (1986)
- DULK, G. A. The Electron-Cyclotron Maser Instability as a Source of Plasma Radiation. *R. M. Winglee and G. A. Dulk*. **307**, 808, 105-G2 (1986)
- EDWARDS, S. Extended Far-Infrared Emission Associated with Mass Outflows from Young Stars: L1551 IRS 5. *S. Edwards, S. E. Strom, R. L. Snell, T. H. Jarrett, C. A. Beichman, and K. M. Strom*. **307**, L65, 107-C10 (1986)
- EITTER, J. J. E. W. Fick Observatory Stellar Radial Velocity Measurements. I. 1976-1984 (Abstract of Paper in 1986 September Suppl.). *W. I. Beavers and J. J. Eitter*. **307**, 870, 106-E4 (1986)
- EL EID, M. F. Nucleosynthesis in Neutron-rich Supernova Ejecta: Erratum. *D. Hartmann, S. E. Woosley, and M. F. El Eid*. **307**, 414, 99-E10 (1986) (Orig. paper in **297**, 837, 110-G1)
- ELVIUS, A. Simultaneous EXOSAT and IUE Observations of Fairall 9: Short and Long Term Variability. *M. Morini, L. Scarsi, D. Molteni, M. Salvati, G. C. Perola, L. Piro, G. Simari, A. Boksenberg, M. V. Penston, M. A. J. Snijders, G. E. Bromage, J. Clavel, A. Elvius, and M. H. Ulrich*. **307**, 486, 102-A10 (1986)
- EMERSON, J. P. Candidate Solar-Type Protostars in Nearby Molecular Cloud Cores. *C. A. Beichman, P. C. Myers, J. P. Emerson, S. Harris, R. Mathieu, P. J. Benson, and R. E. Jennings*. **307**, 337, 98-F13 (1986)
- ENGELMAN, ROLF, JR. Oscillator Strengths of the CN Red System: Erratum. *Sumner P. Davis, Dan Shortenhaus, Glenn Stark, Rolf Engelman, Jr., John G. Phillips, and Robert P. Hubbard*. **307**, 414, 99-E10 (1986) (Orig. paper in **303**, 892, 52-D8)
- EVANS, I. N. Theoretical Models for H II Regions. II. The Extragalactic H II Region Abundance Sequence. *M. A. Dopita and I. N. Evans*. **307**, 431, 101-D3 (1986)
- EVENSON, K. M. Laboratory Measurement of the Rotational Spectrum of the OH Radical with Tunable Far-Infrared Radiation. *J. M. Brown, L. R. Zink, D. A. Jennings, K. M. Evenson, A. Hinz, and I. G. Nolt*. **307**, 410, 99-E6 (1986)
- FAHLMAN, GREGORY G. Mass Functions for Globular Cluster Main Sequences Based on CCD Photometry and Stellar Models. *Robert D. McClure, Don A. Vandenberg, Graeme H. Smith, Gregory G. Fahlman, Harvey B. Richer, James E. Hesser, William E. Harris, Peter B. Stetson, and R. A. Bell*. **307**, L49, 107-B10 (1986)
- FAULKNER, D. J. Hydrostatic Evolutionary Sequences for the Nuclei of Planetary Nebulae. *P. R. Wood and D. J. Faulkner*. **307**, 659, 104-B9 (1986)
- FEGLEY, BRUCE, JR. Chemical Models of the Deep Atmosphere of Uranus. *Bruce Fegley, Jr. and Ronald C. Prinn*. **307**, 852, 106-C8 (1986)
- FINK, UWE. The Infrared Spectrum of M8 E: Evidence for Circumstellar CO. *Harold P. Larson, Reiner Hofmann, and Uwe Fink*. **307**, 295, 98-C3 (1986)
- FITZPATRICK, EDWARD L. An Analysis of the Shapes of Ultraviolet Extinction Curves. I. The 2175 Bump. *Edward L. Fitzpatrick and Derck Massa*. **307**, 286, 98-B9 (1986)
- FOLTZ, CRAIG B. High-Precision Radial Velocities for Faint Giants. II. Calibration of the MMT Echelle. *Ruth C. Peterson and Craig B. Foltz*. **307**, 143, 96-E9 (1986)
- C IV Absorption Systems in QSO Spectra: Is the Character of Systems with $z_{\text{abs}} \approx z_{\text{em}}$ Different from Those with $z_{\text{abs}} \ll z_{\text{em}}$? *Craig B. Foltz, Ray J. Weymann, Bradley M. Peterson, Light Sun, Matthew A. Malkan, and Federic H. Chaffee, Jr.* **307**, 504, 102-C1 (1986)
- FONTAINE, G. Carbon Pollution in Helium-rich White Dwarf Atmospheres: Time-dependent Calculations of the Dredge-Up Process. *C. Pelletier, G. Fontaine, F. Wesemael, G. Michaud, and G. Wegner*. **307**,

- 242, 97-F4 (1986)
- FRUEH, MARIAN. The Far-Infrared and Optical Structure of Arp 220. *Marshall Joy, Daniel F. Lester, Paul M. Harvey, and Marian Frueh.* **307**, 110, 96-B14 (1986)
- FU, ALBERT J. Supernova Colors and Systematic Flux Dilution. *Albert J. Fu and W. David Arnett.* **307**, 726, 105-A1 (1986)
- FULLER, G. M. The Evolution of Radiation-dominated Stars. I. Nonrotating Supermassive Stars. *G. M. Fuller, S. E. Woosley, and T. A. Weaver.* **307**, 675, 104-C11 (1986)
- FULLERTON, ALEX. Optical Flashes in Perseus. *Bill Katz, Dan Driscoll, Kai Millyard, Bruce Waters, Mark Zalcik, Joe Adair, Andreas Gada, Wayne Hayes, Richard Kelsch, Richard McWatters, Richard Rokosz, John Zehethofer, Alex Fullerton, Ron Lyons, and Marshall McCall.* **307**, L33, 100-C9 (1986)
- GADA, ANDREAS. Optical Flashes in Perseus. *Bill Katz, Dan Driscoll, Kai Millyard, Bruce Waters, Mark Zalcik, Joe Adair, Andreas Gada, Wayne Hayes, Richard Kelsch, Richard McWatters, Richard Rokosz, John Zehethofer, Alex Fullerton, Ron Lyons, and Marshall McCall.* **307**, L33, 100-C9 (1986)
- GILMAN, PETER A. Meridional Motions of Sunspots and Sunspot Groups. *Robert Howard and Peter A. Gilman.* **307**, 389, 99-C13 (1986)
- GIOIA, ISABELLA M. New X-Ray and Optical Observations of the X-Ray Discovered QSO-Galaxy Pair 1E 0104.2 + 3153. *Isabella M. Gioia, T. Maccacaro, R. E. Schild, P. Giommi, and J. T. Stocke.* **307**, 497, 102-B8 (1986)
- GIOMMI, P. New X-Ray and Optical Observations of the X-Ray Discovered QSO-Galaxy Pair 1E 0104.2 + 3153. *Isabella M. Gioia, T. Maccacaro, R. E. Schild, P. Giommi, and J. T. Stocke.* **307**, 497, 102-B8 (1986)
- GOLDBABER, D. M. Observations of Neutral Atomic Carbon at 809 GHz. *J. Zmuidzinas, A. L. Betz, and D. M. Goldhaber.* **307**, L75, 107-D11 (1986)
- GREGORY, STEPHEN A. Observational Constraints on Bending the Wide-Angle Tailed Radio Galaxy 1919 + 479. *Jack O. Burns, Christopher P. O'Dea, Stephen A. Gregory, and Thomas J. Balonek.* **307**, 73, 95-F9 (1986)
- GRINDLAY, J. E. Spectral Variability of Cygnus X-2: Structure in the Circumsource Material. *S. D. Vrtilek, S. M. Kahn, J. E. Grindlay, D. J. Helfand, and F. D. Seward.* **307**, 698, 104-E9 (1986)
- HAISCH, BERNHARD M. On the Dividing Line for Stellar Coronae. *Spiro K. Antiochos, Bernhard M. Haisch, and Robert A. Stern.* **307**, L55, 107-C1 (1986)
- HARRINGTON, J. PATRICK. Dust in the Emission-Line Gas of the Seyfert 2 Galaxy Markarian 3. *S. B. Kraemer and J. Patrick Harrington.* **307**, 478, 102-A1 (1986)
- HARRIS, S. Candidate Solar-Type Protostars in Nearby Molecular Cloud Cores. *C. A. Beichman, P. C. Myers, J. P. Emerson, S. Harris, R. Mathieu, P. J. Benson, and R. E. Jennings.* **307**, 337, 98-F13 (1986)
- HARRIS, WILLIAM E. Mass Functions for Globular Cluster Main Sequences Based on CCD Photometry and Stellar Models. *Robert D. McClure, Don A. Vandenberg, Graeme H. Smith, Gregory G. Fahlman, Harvey B. Richer, James E. Hesser, William E. Harris, Peter B. Stetson, and R. A. Bell.* **307**, L49, 107-B10 (1986)
- HARTMANN, D. Nucleosynthesis in Neutron-rich Supernova Ejecta: Erratum. *D. Hartmann, S. E. Woosley, and M. F. El Eid.* **307**, 414, 99-E10 (1986) (Orig. paper in **297**, 837, 110-G1)
- HARVEY, PAUL M. The Far-Infrared and Optical Structure of Arp 220. *Marshall Joy, Daniel F. Lester, Paul M. Harvey, and Marian Frueh.* **307**, 110, 96-B14 (1986)
- HASHIMOTO, MASA-AKI. The $^{14}\text{N}(\epsilon^-, \nu)^{14}\text{C}(\alpha, \gamma)^{18}\text{O}$ Reaction and Helium Flashes in Accreting Helium White Dwarfs. *Masa-aki Hashimoto, Ken'ichi Nomoto, Kenzo Arai, and Keisuke Kaminisi.* **307**, 687, 104-D9 (1986)
- HAWLEY, SUZANNE L. On the Absolute Magnitudes of RR Lyrae Stars. *Thomas G. Barnes III and Suzanne L. Hawley.* **307**, L9, 100-A12 (1986)
- HAYES, WAYNE. Optical Flashes in Perseus. *Bill Katz, Dan Driscoll, Kai Millyard, Bruce Waters, Mark Zalcik, Joe Adair, Andreas Gada, Wayne Hayes, Richard Kelsch, Richard McWatters, Richard Rokosz, John Zehethofer, Alex Fullerton, Ron Lyons, and Marshall McCall.* **307**, L33, 100-C9 (1986)
- HEASLEY, J. N. The Main-Sequence Color-Magnitude Diagram of M92. *J. N. Heasley and Carol A. Christian.* **307**, 738, 105-A13 (1986)
- HELLIGMAN, G. M. Clump 1: An Unusual Molecular Cloud Complex near the Galactic Center. *T. M. Bania, Antony A. Stark, and G. M. Helligman.* **307**, 350, 98-G12 (1986)
- HELFAND, D. J. Spectral Variability of Cygnus X-2: Structure in the Circumsource Material. *S. D. Vrtilek, S. M. Kahn, J. E. Grindlay, D. J. Helfand, and F. D. Seward.* **307**, 698, 104-E9 (1986)
- HENKEL, C. VLA Maps of Formaldehyde Absorption toward NGC 2024. *Richard M. Crutcher, C. Henkel, T. L. Wilson, K. J. Johnston, and J. H. Bieging.* **307**, 302, 98-C12 (1986)
- HERBIG, G. H. The Trapezium Cluster of the Orion Nebula. *G. H. Herbig and D. M. Terndrup.* **307**, 609, 103-E10 (1986)
- HESSER, JAMES E. Mass Functions for Globular Cluster Main Sequences Based on CCD Photometry and Stellar Models. *Robert D. McClure, Don A. Vandenberg, Graeme H. Smith, Gregory G. Fahlman, Harvey B. Richer, James E. Hesser, William E. Harris, Peter B. Stetson, and R. A. Bell.* **307**, L49, 107-B10 (1986)
- HIGDON, J. C. Gamma-Ray Burst Size-Frequency Distributions: Spectral and Temporal Selection Effects. *J. C. Higdon and R. E. Lingenfelter.* **307**, 197, 97-C1 (1986)
- HINZ, A. Laboratory Measurement of the Rotational Spectrum of the OH Radical with Tunable Far-Infrared Radiation. *J. M. Brown, L. R. Zink, D. A. Jennings, K. M. Evenson, A. Hinz, and I. G. Nolt.* **307**, 410, 99-E6 (1986)
- HO, PAUL T. P. Ammonia Observations of Regions with Molecular Outflows. *José M. Torrelles, Paul T. P. Ho, James M. Moran, Luis F. Rodriguez, and Jorge Cantó.* **307**, 787, 105-E9 (1986)
- HODGES, M. W. The Structure of Compact Double Radio Sources: 610 MHz VLBI Observations of 1518 + 047 and 2050 + 364. *R. L. Mutel and M. W. Hodges.* **307**, 472, 101-G3 (1986)
- HOFMANN, REINER. The Infrared Spectrum of M8 E: Evidence for Circumstellar CO. *Harold P. Larson, Reiner Hofmann, and Uwe Fink.* **307**, 295, 98-C3 (1986)
- HONEYCUTT, R. K. A Spectrophotometric Study and Mass Determination for the Cataclysmic Variable Lanning 10. *E. M. Schlegel, R. K. Honeycutt, and R. H. Kaitchuck.* **307**, 760, 105-C7 (1986)
- HORANYI, M. The Effects of Electrostatic Charging on the Dust Distribution at Halley's Comet. *M. Horanyi and D. A. Mendis.* **307**, 800, 105-F8 (1986)
- HOWARD, ROBERT. Meridional Motions of Sunspots and Sunspot Groups. *Robert Howard and Peter A. Gilman.* **307**, 389, 99-C13 (1986)
- HUBBARD, ROBERT P. Oscillator Strengths of the CN Red System: Erratum. *Sumner P. Davis, Dan Shortenhaus, Glenn Stark, Rolf Engelman, Jr., John G. Phillips, and Robert P. Hubbard.* **307**, 414, 99-E10 (1986) (Orig. paper in **303**, 892, 52-D8)
- IRVINE, W. M. The C_3H_2 $2_{20}-2_{11}$ Transition: Absorption in Cold Dark Clouds. *H. E. Matthews, S. C. Madden, L. W. Avery, and W. M. Irvine.* **307**, L69, 107-D6 (1986)
- JARRETT, T. H. Extended Far-Infrared Emission Associated with Mass Outflows from Young Stars: L1551 IRS 5. *S. Edwards, S. E. Strom, R. L. Snell, T. H. Jarrett, C. A. Beichman, and K. M. Strom.* **307**, L65, 107-C10 (1986)
- JENNINGS, D. A. Laboratory Measurement of the Rotational Spectrum of the OH Radical with Tunable Far-Infrared Radiation. *J. M. Brown, L. R. Zink, D. A. Jennings, K. M. Evenson, A. Hinz, and I. G. Nolt.* **307**, 410, 99-E6 (1986)
- JENNINGS, R. E. Candidate Solar-Type Protostars in Nearby Molecular Cloud Cores. *C. A. Beichman, P. C. Myers, J. P. Emerson, S. Harris, R. Mathieu, P. J. Benson, and R. E. Jennings.* **307**, 337, 98-F13 (1986)
- JOHNSTON, K. J. VLA Maps of Formaldehyde Absorption toward NGC 2024. *Richard M. Crutcher, C. Henkel, T. L. Wilson, K. J. Johnston, and J. H. Bieging.* **307**, 302, 98-C12 (1986)
- JONCAS, GILLES. The $\text{H}\alpha$ Velocity Field of the Omega Nebula (M17). *Gilles Joncas and Jean-René Roy.* **307**, 649, 104-A12 (1986)
- JONES, BERNARD J. T. The Tidal Velocity Field in the Local Supercluster. *Per B. Lilje, Amos Yahil, and Bernard J. T. Jones.* **307**, 91, 96-A3 (1986)
- JOY, MARSHALL. The Far-Infrared and Optical Structure of Arp 220. *Marshall Joy, Daniel F. Lester, Paul M. Harvey, and Marian Frueh.* **307**, 110, 96-B14 (1986)
- KAHN, S. M. Spectral Variability of Cygnus X-2: Structure in the Circumsource Material. *S. D. Vrtilek, S. M. Kahn, J. E. Grindlay, D. J. Helfand, and F. D. Seward.* **307**, 698, 104-E9 (1986)
- KAITCHUCK, R. H. A Spectrophotometric Study and Mass Determination for the Cataclysmic Variable Lanning 10. *E. M. Schlegel, R. K. Honeycutt, and R. H. Kaitchuck.* **307**, 760, 105-C7 (1986)
- KAMINISI, KEISUKE. The $^{14}\text{N}(\epsilon^-, \nu)^{14}\text{C}(\alpha, \gamma)^{18}\text{O}$ Reaction and Helium Flashes in Accreting Helium White Dwarfs. *Masa-aki Hashimoto, Ken'ichi Nomoto, Kenzo Arai, and Keisuke Kaminisi.* **307**, 687, 104-D9 (1986)
- KARPEN, JUDITH T. Response of an Emerging Flux Tube to a Current-driven Instability. *Judith T. Karpen and Jay P. Boris.* **307**, 826, 106-A7 (1986)
- KATZ, BILL. Optical Flashes in Perseus. *Bill Katz, Dan Driscoll, Kai Millyard, Bruce Waters, Mark Zalcik, Joe Adair, Andreas Gada,*

- Wayne Hayes, Richard Kelsch, Richard McWatters, Richard Rokosz, John Zehethofer, Alex Fullerton, Ron Lyons, and Marshall McCall. **307**, L33, 100-C9 (1986)
- KEENAN, F. P. A Model Atmosphere Analysis of the Faint Early-Type Halo Star PHL 346. F. P. Keenan, D. J. Lennon, P. J. F. Brown, and P. L. Dufton. **307**, 694, 104-E2 (1986)
- KELSCH, RICHARD. Optical Flashes in Perseus. Bill Katz, Dan Driscoll, Kai Millyard, Bruce Waters, Mark Zalcik, Joe Adair, Andreas Gada, Wayne Hayes, Richard Kelsch, Richard McWatters, Richard Rokosz, John Zehethofer, Alex Fullerton, Ron Lyons, and Marshall McCall. **307**, L33, 100-C9 (1986)
- KHOKHLOVA, V. L. Distribution of Chemical Elements over the Surface of the Magnetic Ap Star Theta Aurigae. V. L. Khokhlova, J. B. Rice, and W. H. Wehlau. **307**, 768, 105-D1 (1986)
- KOHL, JOHN L. Analysis of Coronal H I Lyman-Alpha Measurements in a Polar Region of the Sun Observed in 1979. George L. Withbroe, John L. Kohl, and Heinz Weiser. **307**, 381, 99-C5 (1986)
- KOVÁCS, G. Fourier Analysis of the Light Curves of the RR Lyrae Stars in the Globular Clusters M15, NGC 6171, and NGC 6723. G. Kovács, I. Shlosman, and J. R. Buchler. **307**, 593, 103-D7 (1986)
- KRAEMER, S. B. Dust in the Emission-Line Gas of the Seyfert 2 Galaxy Markarian 3. S. B. Kraemer and J. Patrick Harrington. **307**, 478, 102-A1 (1986)
- KRAUSE-POLSTORFF, J. JPL Pulsar Timing Observations. IV. Excess Phase Noise (Abstract of Paper in 1986 September Suppl.). G. S. Downs and J. Krause-Polstorff. **307**, 869, 106-E3 (1986)
- KRISHNAKUMAR, E. Radiative Lifetimes of B and C¹P⁺ States of CO. E. Krishnakumar and S. K. Srivastava. **307**, 795, 105-F3 (1986)
- LABONTE, B. J. Spectra of Plages on the Sun and Stars. II. The H I H α Line (Abstract of Paper in 1986 September Suppl.). B. J. LaBonte. **307**, 870, 106-D4 (1986)
- Spectra of Plages on the Sun and Stars. I. Ca II H and K Lines (Abstract of Paper in 1986 September Suppl.). B. J. LaBonte. **307**, 870, 106-E4 (1986)
- LAMB, F. K. Vela X-1 Pulse Timing. I. Determination of the Neutron Star Orbit. P. E. Boynton, J. E. Deeter, F. K. Lamb, and G. Zylstra. **307**, 545, 103-A1 (1986)
- LARSON, HAROLD P. The Infrared Spectrum of M8 E: Evidence for Circumstellar CO. Harold P. Larson, Reiner Hofmann, and Uwe Fink. **307**, 295, 98-C3 (1986)
- LATTIMER, JAMES M. The Birth of Neutron Stars. Adam Burrows and James M. Lattimer. **307**, 178, 97-A10 (1986)
- LENNON, D. J. A Model Atmosphere Analysis of the Faint Early-Type Halo Star PHL 346. F. P. Keenan, D. J. Lennon, P. J. F. Brown, and P. L. Dufton. **307**, 694, 104-E2 (1986)
- LESTER, DANIEL F. The Far-Infrared and Optical Structure of Arp 220. Marshall Joy, Daniel F. Lester, Paul M. Harvey, and Marian Frueh. **307**, 110, 96-B14 (1986)
- LILJE, PER B. The Tidal Velocity Field in the Local Supercluster. Per B. Lilje, Amos Yahil, and Bernard J. T. Jones. **307**, 91, 96-A3 (1986)
- LIN, D. N. C. On the Tidal Interaction between Protoplanets and the Primordial Solar Nebula. II. Self-Consistent Nonlinear Interaction. D. N. C. Lin and John Papaloizou. **307**, 395, 99-D5 (1986)
- LINGENFELTER, R. E. Gamma-Ray Burst Size-Frequency Distributions: Spectral and Temporal Selection Effects. J. C. Higdon and R. E. Lingenfelter. **307**, 197, 97-C1 (1986)
- LITTLE-MARENIN, IRENE R. Carbon Stars with Silicate Dust in Their Circumstellar Shells. Irene R. Little-Marenin. **307**, L15, 100-B3 (1986)
- LCH, EDWIN D. A Measurement of the Mass Density of the Universe. Edwin D. Loh and Earl J. Spillar. **307**, L1, 100-A4 (1986)
- LOVELACE, R. V. E. Theory of Axisymmetric Magnetohydrodynamic Flows: Disks (Abstract of Paper in 1986 September Suppl.). R. V. E. Lovelace, C. Mehanian, C. M. Mobarry, and M. E. Sulkanen. **307**, 867, 106-E1 (1986)
- LOW, B. C. Blowup of Force-free Magnetic Fields in the Infinite Region of Space. B. C. Low. **307**, 205, 97-C9 (1986)
- LUBOW, STEPHEN H. Cloud Collisional Damping of Spiral Density Waves in Galaxies. Stephen H. Lubow. **307**, 139, 107-B1 (1986)
- LYONS, RON. Optical Flashes in Perseus. Bill Katz, Dan Driscoll, Kai Millyard, Bruce Waters, Mark Zalcik, Joe Adair, Andreas Gada, Wayne Hayes, Richard Kelsch, Richard McWatters, Richard Rokosz, John Zehethofer, Alex Fullerton, Ron Lyons, and Marshall McCall. **307**, L33, 100-C9 (1986)
- MACCACCARO, T. New X-Ray and Optical Observations of the X-Ray Discovered QSO-Galaxy Pair 1E 0104.2 + 3153. Isabella M. Gioia, T. Maccacaro, R. E. Schild, P. Giommi, and J. T. Stocke. **307**, 497, 102-B8 (1986)
- MADLEN, S. C. The C₃H₂ 2₂₀-2₁₁ Transition: Absorption in Cold Dark Clouds. H. E. Matthews, S. C. Madden, L. W. Avery, and W. M. Irvine. **307**, L69, 107-D6 (1986)
- MALKAN, MATTHEW A. C IV Absorption Systems in QSO Spectra: Is the Character of Systems with $z_{\text{abs}} \approx z_{\text{em}}$ Different from Those with $z_{\text{abs}} \ll z_{\text{em}}$? Craig B. Foltz, Ray J. Weymann, Bradley M. Peterson, Light Sun, Matthew A. Malkan, and Federic H. Chaffee, Jr. **307**, 504, 102-C1 (1986)
- MAMON, GARY A. Are Compact Groups of Galaxies Physically Dense? Gary A. Mamon. **307**, 426, 101-C12 (1986)
- MARKERT, T. H. High-Resolution X-Ray Spectroscopic Evidence on Nonequilibrium Conditions in the Cygnus Loop. P. W. Vedder, C. R. Canizares, T. H. Markert, and A. K. Pradhan. **307**, 269, 98-A3 (1986)
- MASSA, DERCK. An Analysis of the Shapes of Ultraviolet Extinction Curves. I. The 2175 Bump. Edward L. Fitzpatrick and Derck Massa. **307**, 286, 98-B9 (1986)
- MATHIEU, R. Candidate Solar-Type Protostars in Nearby Molecular Cloud Cores. C. A. Beichman, P. C. Myers, J. P. Emerson, S. Harris, R. Mathieu, P. J. Benson, and R. E. Jennings. **307**, 337, 98-F13 (1986)
- MATTHEWS, H. E. The C₃H₂ 2₂₀-2₁₁ Transition: Absorption in Cold Dark Clouds. H. E. Matthews, S. C. Madden, L. W. Avery, and W. M. Irvine. **307**, L69, 107-D6 (1986)
- MCCALL, MARSHALL. Optical Flashes in Perseus. Bill Katz, Dan Driscoll, Kai Millyard, Bruce Waters, Mark Zalcik, Joe Adair, Andreas Gada, Wayne Hayes, Richard Kelsch, Richard McWatters, Richard Rokosz, John Zehethofer, Alex Fullerton, Ron Lyons, and Marshall McCall. **307**, L33, 100-C9 (1986)
- MCCLURE, ROBERT D. Mass Functions for Globular Cluster Main Sequences Based on CCD Photometry and Stellar Models. Robert D. McClure, Don A. Vandenberg, Graeme H. Smith, Gregory G. Fahlman, Harvey B. Richer, James E. Hesser, William E. Harris, Peter B. Stetson, and R. A. Bell. **307**, L49, 107-B10 (1986)
- MCCLYMONT, A. N. Quasi-steady Mass Flows in Coronal Loops. I. J. D. Craig and A. N. McClymont. **307**, 367, 99-B6 (1986)
- McMILLAN, STEPHEN L. W. A Unified N-Body and Statistical Treatment of Stellar Dynamics. III. Early Postcollapse Evolution of Globular Clusters. Stephen L. W. McMillan. **307**, 126, 96-D6 (1986)
- McWATTERS, RICHARD. Optical Flashes in Perseus. Bill Katz, Dan Driscoll, Kai Millyard, Bruce Waters, Mark Zalcik, Joe Adair, Andreas Gada, Wayne Hayes, Richard Kelsch, Richard McWatters, Richard Rokosz, John Zehethofer, Alex Fullerton, Ron Lyons, and Marshall McCall. **307**, L33, 100-C9 (1986)
- MEHANIAN, C. Theory of Axisymmetric Magnetohydrodynamic Flows: Disks (Abstract of Paper in 1986 September Suppl.). R. V. E. Lovelace, C. Mehanian, C. M. Mobarry, and M. E. Sulkanen. **307**, 867, 106-E1 (1986)
- MENDIS, D. A. The Effects of Electrostatic Charging on the Dust Distribution at Halley's Comet. M. Horanyi and D. A. Mendis. **307**, 800, 105-F8 (1986)
- MICHAUD, G. Carbon Pollution in Helium-rich White Dwarf Atmospheres: Time-dependent Calculations of the Dredge-Up Process. C. Pelletier, G. Fontaine, F. Wesemael, G. Michaud, and G. Wegner. **307**, 242, 97-F4 (1986)
- MILLYARD, KAI. Optical Flashes in Perseus. Bill Katz, Dan Driscoll, Kai Millyard, Bruce Waters, Mark Zalcik, Joe Adair, Andreas Gada, Wayne Hayes, Richard Kelsch, Richard McWatters, Richard Rokosz, John Zehethofer, Alex Fullerton, Ron Lyons, and Marshall McCall. **307**, L33, 100-C9 (1986)
- MOBARRY, C. M. Theory of Axisymmetric Magnetohydrodynamic Flows: Disks (Abstract of Paper in 1986 September Suppl.). R. V. E. Lovelace, C. Mehanian, C. M. Mobarry, and M. E. Sulkanen. **307**, 867, 106-E1 (1986)
- MOLTENI, D. Simultaneous EXOSAT and IUE Observations of Fairall 9: Short and Long Term Variability. M. Morini, L. Scarfi, D. Molteni, M. Salvati, G. C. Perola, L. Piro, G. Simari, A. Boksenberg, M. V. Penston, M. A. J. Snijders, G. E. Bromage, J. Clavel, A. Elvius, and M. H. Ulrich. **307**, 486, 102-A10 (1986)
- MORAN, JAMES M. Ammonia Observations of Regions with Molecular Outflows. José M. Torrelles, Paul T. P. Ho, James M. Moran, Luis F. Rodriguez, and Jorge Cantó. **307**, 787, 105-E9 (1986)
- MORGAN, JEFF. Optical Manifestations of Mass Outflows from Young Stars: An Atlas of CCD Images of Herbig-Haro Objects (Abstract of Paper in 1986 September Suppl.). Karen M. Strom, Stephen E. Strom, Sidney C. Wolff, Jeff Morgan, and Michael Wenz. **307**, 867, 106-E1 (1986)
- MORINI, M. Simultaneous EXOSAT and IUE Observations of Fairall 9: Short and Long Term Variability. M. Morini, L. Scarfi, D. Molteni, M. Salvati, G. C. Perola, L. Piro, G. Simari, A. Boksenberg, M. V. Penston, M. A. J. Snijders, G. E. Bromage, J. Clavel, A. Elvius, and M. H. Ulrich. **307**, 486, 102-A10 (1986)
- MÜLLER, EWALD. Carbon Combustion Supernovae: Numerical Studies of the Final Evolution of Degenerate Carbon-Oxygen Cores. Ewald Müller and W. David Arnett. **307**, 619, 103-F8 (1986)
- MUTEL, R. L. The Structure of Compact Double Radio Sources: 610 MHz VLBI Observations of 1518 + 047 and 2050 + 364. R. L.

- Mutel and M. W. Hodges. **307**, 472, 101-G3 (1986)
- MYERS, P. C. Candidate Solar-Type Protostars in Nearby Molecular Cloud Cores. C. A. Beichman, P. C. Myers, J. P. Emerson, S. Harris, R. Mathieu, P. J. Benson, and R. E. Jennings. **307**, 337, 98-F13 (1986)
- NADEAU, RAYMOND. Circular Polarization in T Tauri Stars. Raymond Nadeau and Pierre Bastien. **307**, L5, 100-A8 (1986)
- NOLT, I. G. Laboratory Measurement of the Rotational Spectrum of the OH Radical with Tunable Far-Infrared Radiation. J. M. Brown, L. R. Zink, D. A. Jennings, K. M. Evenson, A. Hinz, and I. G. Nolt. **307**, 410, 99-E6 (1986)
- NOMOTO, KEN'ICHI. The $^{14}\text{N}(\epsilon^-, \nu)^{14}\text{C}(\alpha, \gamma)^{18}\text{O}$ Reaction and Helium Flashes in Accreting Helium White Dwarfs. Masa-aki Hashimoto, Ken'ichi Nomoto, Kenzo Arai, and Keisuke Kaminisi. **307**, 687, 104-D9 (1986)
- NORRIS, JOHN. Population Studies. III. Further Comparison of Spectroscopically and Kinematically Selected Halo Samples. John Norris. **307**, 123, 96-D3 (1986)
- NORTH, A. R. Pulsed Very High Energy Gamma Rays from the COS B Source 2CG 006 - 00. B. C. Raubenheimer, A. R. North, O. C. De Jager, G. van Urk, and A. J. van Tonder. **307**, L43, 107-B5 (1986)
- O'DEA, CHRISTOPHER P. Observational Constraints on Bending the Wide-Angle Tailed Radio Galaxy 1919 + 479. Jack O. Burns, Christopher P. O'Dea, Stephen A. Gregory, and Thomas J. Balonek. **307**, 73, 95-F9 (1986)
- ODENWALD, STEN F. An IRAS Survey of Infrared Excesses in G-Type Stars. Sten F. Odenwald. **307**, 711, 104-F6 (1986)
- OKE, J. B. Analysis of Four F Subdwarfs Used as Spectrophotometric Standards. R. A. Bell and J. B. Oke. **307**, 253, 97-G1 (1986)
- OLSZEWSKI, EDWARD W. High-Precision Radial Velocities for Faint Giants. I. MMT Echelle Results for Globular Cluster Stars. Ruth C. Peterson, Edward W. Olszewski, and Marc Aaronson. **307**, 139, 96-E5 (1986)
- PANTELAKI, IRINI. Secondary Metallicity in Analytic Models of Chemical Evolution of Galaxies. Donald D. Clayton and Irini Pantelaki. **307**, 441, 101-D13 (1986)
- PAPALOIZOU, JOHN. On the Tidal Interaction between Protoplanets and the Primordial Solar Nebula. II. Self-Consistent Nonlinear Interaction. D. N. C. Lin and John Papaloizou. **307**, 395, 99-D5 (1986)
- PARTHASARATHY, S. High Efficiency of the Penrose Process of Energy Extraction from Rotating Black Holes Immersed in Electromagnetic Fields. S. Parthasarathy, S. M. Wagh, S. V. Dhurandhar, and N. Dadhich. **307**, 38, 95-D2 (1986)
- PELLETIER, C. Carbon Pollution in Helium-rich White Dwarf Atmospheres: Time-dependent Calculations of the Dredge-Up Process. C. Pelletier, G. Fontaine, F. Wesemael, G. Michaud, and G. Wegner. **307**, 242, 97-F4 (1986)
- PENSTON, M. V. Simultaneous EXOSAT and IUE Observations of Fairall 9: Short and Long Term Variability. M. Morini, L. Scarsi, D. Molteni, M. Salvati, G. C. Perola, L. Piro, G. Simari, A. Boksenberg, M. V. Penston, M. A. J. Snijders, G. E. Bromage, J. Clavel, A. Elvius, and M. H. Ulrich. **307**, 486, 102-A10 (1986)
- PEROLA, G. C. Simultaneous EXOSAT and IUE Observations of Fairall 9: Short and Long Term Variability. M. Morini, L. Scarsi, D. Molteni, M. Salvati, G. C. Perola, L. Piro, G. Simari, A. Boksenberg, M. V. Penston, M. A. J. Snijders, G. E. Bromage, J. Clavel, A. Elvius, and M. H. Ulrich. **307**, 486, 102-A10 (1986)
- PETERSON, BRADLEY M. C IV Absorption Systems in QSO Spectra: Is the Character of Systems with $z_{\text{abs}} \approx z_{\text{em}}$ Different from Those with $z_{\text{abs}} \ll z_{\text{em}}$? Craig B. Foltz, Ray J. Weymann, Bradley M. Peterson, Light Sun, Matthew A. Malkan, and Federic H. Chaffee, Jr. **307**, 504, 102-C1 (1986)
- PETERSON, RUTH C. High-Precision Radial Velocities for Faint Giants. I. MMT Echelle Results for Globular Cluster Stars. Ruth C. Peterson, Edward W. Olszewski, and Marc Aaronson. **307**, 139, 96-E5 (1986)
- High-Precision Radial Velocities for Faint Giants. II. Calibration of the MMT Echelle. Ruth C. Peterson and Craig B. Foltz. **307**, 143, 96-E9 (1986)
- PHILLIPS, JOHN G. Oscillator Strengths of the CN Red System: Erratum. Sumner P. Davis, Dan Shortenhaus, Glenn Stark, Rolf Engelman, Jr., John G. Phillips, and Robert P. Hubbard. **307**, 414, 99-E10 (1986) (Orig. paper in **303**, 892, 52-D8)
- PIRO, L. Simultaneous EXOSAT and IUE Observations of Fairall 9: Short and Long Term Variability. M. Morini, L. Scarsi, D. Molteni, M. Salvati, G. C. Perola, L. Piro, G. Simari, A. Boksenberg, M. V. Penston, M. A. J. Snijders, G. E. Bromage, J. Clavel, A. Elvius, and M. H. Ulrich. **307**, 486, 102-A10 (1986)
- PNEUMAN, G. W. The Energy Balance of Plasmoids in the Solar Atmosphere. P. J. Cargill and G. W. Pneuman. **307**, 820, 106-A1 (1986)
- POPPER, DANIEL M. Can Binary Stars Test Solar Models? Daniel M. Popper and Roger K. Ulrich. **307**, L61, 107-C6 (1986)
- PRADHAN, A. K. High-Resolution X-Ray Spectroscopic Evidence on Nonequilibrium Conditions in the Cygnus Loop. P. W. Vedder, C. R. Canizares, T. H. Markert, and A. K. Pradhan. **307**, 269, 98-A3 (1986)
- PRANTZOS, NIKOS. On the Production of ^{26}Al by Wolf-Rayet Stars: Galactic Yield and Gamma-Ray Line Emissivity. Nikos Prantzos and Michel Cassé. **307**, 324, 98-E14 (1986)
- PRINN, RONALD C. Chemical Models of the Deep Atmosphere of Uranus. Bruce Fegley, Jr. and Ronald C. Prinn. **307**, 852, 106-C8 (1986)
- PRITCHET, CHRISTOPHER J. Optical Studies of Cassiopeia A. VII. Search for a Stellar Remnant. Sidney van den Bergh and Christopher J. Pritchett. **307**, 723, 104-G7 (1986)
- PROSZYŃSKI, M. A Cross-Correlation Analysis of Subpulse Drift in PSR 0809 + 74, PSR 1237 + 25 and PSR 1919 + 21. M. Proszynski and A. Wolszczan. **307**, 540, 102-G6 (1986)
- RAUBENHEIMER, B. C. Pulsed Very High Energy Gamma Rays from the COS B Source 2CG 006 - 00. B. C. Raubenheimer, A. R. North, O. C. De Jager, G. van Urk, and A. J. van Tonder. **307**, L43, 107-B5 (1986)
- RICE, J. B. Distribution of Chemical Elements over the Surface of the Magnetic Ap Star Theta Aurigae. V. L. Khokhlova, J. B. Rice, and W. H. Wehlau. **307**, 768, 105-D1 (1986)
- RICHER, HARVEY B. Mass Functions for Globular Cluster Main Sequences Based on CCD Photometry and Stellar Models. Robert D. McClure, Don A. Vandenberg, Graeme H. Smith, Gregory G. Fahlman, Harvey B. Richer, James E. Hesser, William E. Harris, Peter B. Stetson, and R. A. Bell. **307**, L49, 107-B10 (1986)
- RICKETT, B. J. Refractive Interstellar Scintillations of Radio Sources. B. J. Rickett. **307**, 564, 103-B6 (1986)
- RODRIGUEZ, LUIS F. Ammonia Observations of Regions with Molecular Outflows. José M. Torrelles, Paul T. P. Ho, James M. Moran, Luis F. Rodriguez, and Jorge Cantó. **307**, 787, 105-E9 (1986)
- ROGER, R. S. The H II Region Surrounding LkHa 101 and Small-Scale Structure in the Nearby Atomic Hydrogen. P. E. Dewdney and R. S. Roger. **307**, 275, 98-A9 (1986)
- ROKOSZ, RICHARD. Optical Flashes in Perseus. Bill Katz, Dan Driscoll, Kai Millyard, Bruce Waters, Mark Zalcik, Joe Adair, Andreas Gada, Wayne Hayes, Richard Kelsch, Richard McWatters, Richard Rokosz, John Zehethofer, Alex Fullerton, Ron Lyons, and Marshall McCall. **307**, L33, 100-C9 (1986)
- ROY, JEAN-RENÉ. The H α Velocity Field of the Omega Nebula (M17). Gilles Joncas and Jean-René Roy. **307**, 649, 104-A12 (1986)
- SALVATI, M. Simultaneous EXOSAT and IUE Observations of Fairall 9: Short and Long Term Variability. M. Morini, L. Scarsi, D. Molteni, M. Salvati, G. C. Perola, L. Piro, G. Simari, A. Boksenberg, M. V. Penston, M. A. J. Snijders, G. E. Bromage, J. Clavel, A. Elvius, and M. H. Ulrich. **307**, 486, 102-A10 (1986)
- SANDAGE, ALLAN. The Redshift-Distance Relation. IX. Perturbation of the Very Nearby Velocity Field by the Mass of the Local Group. Allan Sandage. **307**, 1, 95-A7 (1986)
- SCARSI, L. Simultaneous EXOSAT and IUE Observations of Fairall 9: Short and Long Term Variability. M. Morini, L. Scarsi, D. Molteni, M. Salvati, G. C. Perola, L. Piro, G. Simari, A. Boksenberg, M. V. Penston, M. A. J. Snijders, G. E. Bromage, J. Clavel, A. Elvius, and M. H. Ulrich. **307**, 486, 102-A10 (1986)
- SCHAEFER, BRADLEY E. R. Coronal Borealis Stars and Planetary Nebulae. Bradley E. Schaefer. **307**, 644, 104-A9 (1986)
- SCHILD, R. E. New X-Ray and Optical Observations of the X-Ray Discovered QSO-Galaxy Pair 1E 0104.2 + 3153. Isabella M. Gioia, T. Maccacaro, R. E. Schild, P. Giommi, and J. T. Stocke. **307**, 497, 102-B8 (1986)
- SCHLEGEL, E. M. A Spectrophotometric Study and Mass Determination for the Cataclysmic Variable Lanning 10. E. M. Schlegel, R. K. Honeycutt, and R. H. Kitchuck. **307**, 760, 105-C7 (1986)
- SCHWARTZ, RICHARD D. Optical Spectroscopy of HH-Exciting Stars from Scattered Light Continua. Martin Cohen, Michael A. Dopita, and Richard D. Schwartz. **307**, L21, 100-B8 (1986)
- SERVICE, A. T. Fitting Formulas for the Equation of State of a Perfect, Semirelativistic Boltzmann Gas. A. T. Service. **307**, 60, 95-E10 (1986)
- SEWARD, F. D. Spectral Variability of Cygnus X-2: Structure in the Circumsource Material. S. D. Vrilek, S. M. Kahn, J. E. Grindlay, D. J. Helfand, and F. D. Seward. **307**, 698, 104-E9 (1986)
- SHAPIRO, STUART L. Relativistic Stellar Dynamics on the Computer. IV. Collapse of a Star Cluster to a Black Hole. Stuart L. Shapiro and Saul A. Teukolsky. **307**, 575, 103-C3 (1986)
- SHLOSMAN, I. Fourier Analysis of the Light Curves of the RR Lyrae Stars in the Globular Clusters M15, NGC 6171, and NGC 6723. G. Kovács, I. Shlosman, and J. R. Buchler. **307**, 593, 103-D7 (1986)
- SHORTENHAUS, DAN. Oscillator Strengths of the CN Red System: Erratum. Sumner P. Davis, Dan Shortenhaus, Glenn Stark, Rolf Engelman.

- man, Jr., John G. Phillips, and Robert P. Hubbard. **307**, 414, 99-E10 (1986) (Orig. paper in **303**, 892, 52-D8)
- SILK, JOSEPH. Self-regulated Cooling Flows in Elliptical Galaxies and in Cluster Cores: Is Exclusively Low Mass Star Formation Really Necessary? Joseph Silk, S. Djorgovski, Rosemary F. G. Wyse, and Gustavo Bruzual A. **307**, 415, 101-C1 (1986)
- SIMARI, G. Simultaneous EXOSAT and IUE Observations of Fairall 9: Short and Long Term Variability. M. Morini, L. Scarsi, D. Molteni, M. Salvati, G. C. Perola, L. Piro, G. Simari, A. Boksenberg, M. V. Penston, M. A. J. Snijders, G. E. Bromage, J. Clavel, A. Elvius, and M. H. Ulrich. **307**, 486, 102-A10 (1986)
- SLAGTER, R. J. High-Frequency Perturbations and Gravitational Collapse in Gravity Theory Coupled with a Higgs Field. R. J. Slagter and G. A. Bäuerle. **307**, 20, 95-B12 (1986)
- SMITH, GRAEME H. Mass Functions for Globular Cluster Main Sequences Based on CCD Photometry and Stellar Models. Robert D. McClure, Don A. Vandenberg, Graeme H. Smith, Gregory G. Fahlman, Harvey B. Richer, James E. Hesser, William E. Harris, Peter B. Stetson, and R. A. Bell. **307**, L49, 107-B10 (1986)
- SMITH, MYRON A. The Nonradial Oscillations of Epsilon Persei. I. A Lawn-Sprinkling Shock. Myron A. Smith. **307**, 213, 97-D3 (1986)
- SNELL, R. L. Extended Far-Infrared Emission Associated with Mass Outflows from Young Stars: L1551 IRS 5. S. Edwards, S. E. Strom, R. L. Snell, T. H. Jarrett, C. A. Beichman, and K. M. Strom. **307**, L65, 107-C10 (1986)
- SNIDERS, M. A. J. Simultaneous EXOSAT and IUE Observations of Fairall 9: Short and Long Term Variability. M. Morini, L. Scarsi, D. Molteni, M. Salvati, G. C. Perola, L. Piro, G. Simari, A. Boksenberg, M. V. Penston, M. A. J. Snijders, G. E. Bromage, J. Clavel, A. Elvius, and M. H. Ulrich. **307**, 486, 102-A10 (1986)
- SOFIA, S. Turbulent Compressible Convection in a Deep Atmosphere. III. Tests on the Validity and Limitation of the Numerical Approach. Kwing L. Chan and S. Sofia. **307**, 222, 97-D12 (1986)
- SPEAR, R. H. A Comment on the ${}^7\text{Be}(\rho, \gamma){}^8\text{B}$ Cross Section and the Solar Neutrino Problem. F. C. Barker and R. H. Spear. **307**, 847, 106-C3 (1986)
- SPILLAR, EARL J. A Measurement of the Mass Density of the Universe. Edwin D. Loh and Earl J. Spillar. **307**, L1, 100-A4 (1986)
- SRIVASTAVA, S. K. Radiative Lifetimes of B and C ${}^1\text{P}^+$ States of CO. E. Krishnakumar and S. K. Srivastava. **307**, 795, 105-F3 (1986)
- STARK, ANTHONY A. Clump 1: An Unusual Molecular Cloud Complex near the Galactic Center. T. M. Bania, Antony A. Stark, and G. M. Heiligman. **307**, 350, 98-G12 (1986)
- STARK, GLENN. Oscillator Strengths of the CN Red System: Erratum. Sumner P. Davis, Dan Shortenhaus, Glenn Stark, Rolf Engelman, Jr., John G. Phillips, and Robert P. Hubbard. **307**, 414, 99-E10 (1986) (Orig. paper in **303**, 892, 52-D8)
- STERN, ROBERT A. On the Dividing Line for Stellar Coronae. Spiro K. Antiochos, Bernhard M. Haisch, and Robert A. Stern. **307**, L55, 107-C1 (1986)
- STETSON, PETER B. Mass Functions for Globular Cluster Main Sequences Based on CCD Photometry and Stellar Models. Robert D. McClure, Don A. Vandenberg, Graeme H. Smith, Gregory G. Fahlman, Harvey B. Richer, James E. Hesser, William E. Harris, Peter B. Stetson, and R. A. Bell. **307**, L49, 107-B10 (1986)
- STOCKE, J. T. New X-Ray and Optical Observations of the X-Ray Discovered QSO-Galaxy Pair 1E 0104.2 + 3153. Isabella M. Gioia, T. Maccacaro, R. E. Schild, P. Giommi, and J. T. Stocke. **307**, 497, 102-B8 (1986)
- STROM, K. M. Extended Far-Infrared Emission Associated with Mass Outflows from Young Stars: L1551 IRS 5. S. Edwards, S. E. Strom, R. L. Snell, T. H. Jarrett, C. A. Beichman, and K. M. Strom. **307**, L65, 107-C10 (1986)
- STROM, KAREN M. Optical Manifestations of Mass Outflows from Young Stars: An Atlas of CCD Images of Herbig-Haro Objects (Abstract of Paper in 1986 September Suppl.). Karen M. Strom, Stephen E. Strom, Sidney C. Wolff, Jeff Morgan, and Michael Wenz. **307**, 867, 106-E1 (1986)
- STROM, S. E. Extended Far-Infrared Emission Associated with Mass Outflows from Young Stars: L1551 IRS 5. S. Edwards, S. E. Strom, R. L. Snell, T. H. Jarrett, C. A. Beichman, and K. M. Strom. **307**, L65, 107-C10 (1986)
- STROM, STEPHEN E. Optical Manifestations of Mass Outflows from Young Stars: An Atlas of CCD Images of Herbig-Haro Objects (Abstract of Paper in 1986 September Suppl.). Karen M. Strom, Stephen E. Strom, Sidney C. Wolff, Jeff Morgan, and Michael Wenz. **307**, 867, 106-E1 (1986)
- SULKANEN, M. E. Theory of Axisymmetric Magnetohydrodynamic Flows: Disks (Abstract of Paper in 1985 September Suppl.). R. V. E. Lovelace, C. Mehanian, C. M. Mobarry, and M. E. Sulkanen. **307**, 867, 106-E1 (1986)
- SUN, LIGHT. C IV Absorption Systems in QSO Spectra: Is the Character of Systems with $z_{\text{abs}} \approx z_{\text{em}}$ Different from Those with $z_{\text{abs}} \ll z_{\text{em}}$? Craig B. Foltz, Ray J. Weymann, Bradley M. Peterson, Light Sun, Matthew A. Malkan, and Federic H. Chaffee, Jr. **307**, 504, 102-C1 (1986)
- TERNDROP, D. M. The Trapezium Cluster of the Orion Nebula. G. H. Herbig and D. M. Terndrup. **307**, 609, 103-E10 (1986)
- TEUKOLSKY, SAUL A. Relativistic Stellar Dynamics on the Computer. IV. Collapse of a Star Cluster to a Black Hole. Stuart I. Shapiro and Saul A. Teukolsky. **307**, 575, 103-C3 (1986)
- TOHLINE, JOEL E. What Warped Disks Can Tell Us about Galaxy Halos and Gravity. Dimitris M. Christodoulou and Joel E. Tohline. **307**, 449, 101-E7 (1986)
- TORRELLES, JOSÉ M. Ammonia Observations of Regions with Molecular Outflows. José M. Torrelles, Paul T. P. Ho, James M. Moran, Luis F. Rodriguez, and Jorge Cantó. **307**, 787, 105-E9 (1986)
- ULRICH, M. H. Simultaneous EXOSAT and IUE Observations of Fairall 9: Short and Long Term Variability. M. Morini, L. Scarsi, D. Molteni, M. Salvati, G. C. Perola, L. Piro, G. Simari, A. Boksenberg, M. V. Penston, M. A. J. Snijders, G. E. Bromage, J. Clavel, A. Elvius, and M. H. Ulrich. **307**, 486, 102-A10 (1986)
- ULRICH, ROGER K. Can Binary Stars Test Solar Models? Daniel M. Popper and Roger K. Ulrich. **307**, L61, 107-C6 (1986)
- VAN DEN BERGH, SIDNEY. Optical Studies of Cassiopeia A. VII. Search for a Stellar Remnant. Sidney van den Bergh and Christopher J. Pritchet. **307**, 723, 104-G7 (1986)
- VAN DISHOCK, EWINE F. Detection of the (3,0) Phillips Band of Interstellar C₂ toward Zeta Ophiuchi. Ewine F. van Dishoeck and John H. Black. **307**, 332, 98-F8 (1986)
- Comprehensive Models of Diffuse Interstellar Clouds: Physical Conditions and Molecular Abundances (Abstract of Paper in 1986 September Suppl.). Ewine F. van Dishoeck and John H. Black. **307**, 869, 106-E3 (1986)
- VAN HAMME, W. Close Binary Mass Anomalies and Metallicity. W. Van Hamme and R. E. Wilson. **307**, 151, 96-F6 (1986)
- VAN TONDER, A. J. Pulsed Very High Energy Gamma Rays from the COS B Source 2CG 006 - 00. B. C. Raubenheimer, A. R. North, O. C. De Jager, G. van Urk, and A. J. van Tonder. **307**, L43, 107-B5 (1986)
- VAN URK, G. Pulsed Very High Energy Gamma Rays from the COS B Source 2CG 006 - 00. B. C. Raubenheimer, A. R. North, O. C. De Jager, G. van Urk, and A. J. van Tonder. **307**, L43, 107-B5 (1986)
- VEDDER, P. W. High-Resolution X-Ray Spectroscopic Evidence on Non-equilibrium Conditions in the Cygnus Loop. P. W. Vedder, C. R. Canizares, T. H. Markert, and A. K. Pradhan. **307**, 269, 98-A3 (1986)
- VRTILEK, S. D. Spectral Variability of Cygnus X-2: Structure in the Circumscribed Material. S. D. Vrtilek, S. M. Kahn, J. E. Grindlay, D. J. Helfand, and F. D. Seward. **307**, 698, 104-E9 (1986)
- WAGH, S. M. High Efficiency of the Penrose Process of Energy Extraction from Rotating Black Holes Immersed in Electromagnetic Fields. S. Parthasarathy, S. M. Wagh, S. V. Dhurandhar, and N. Dadhich. **307**, 38, 95-D2 (1986)
- WATERS, BRUCE. Optical Flashes in Perseus. Bill Katz, Dan Driscoll, Kai Millyard, Bruce Waters, Mark Zalcik, Joe Adair, Andreas Gada, Wayne Hayes, Richard Kelsch, Richard McWaters, Richard Rokosz, John Zehethofer, Alex Fullerton, Ron Lyons, and Marshall McCall. **307**, L33, 100-C9 (1986)
- WATSON, WILLIAM D. Diffraction in Gravitational Lensing for Compact Objects of Low Mass. Shuji Deguchi and William D. Watson. **307**, 30, 95-C8 (1986)
- WEAVER, T. A. The Evolution of Radiation-dominated Stars. I. Nonrotating Supermassive Stars. G. M. Fuller, S. E. Woosley, and T. A. Weaver. **307**, 675, 104-C11 (1986)
- WEGNER, G. Carbon Pollution in Helium-rich White Dwarf Atmospheres: Time-dependent Calculations of the Dredge-Up Process. C. Pelletier, G. Fontaine, F. Wesemael, G. Michaud, and G. Wegner. **307**, 242, 97-F4 (1986)
- WEHLAU, W. H. Distribution of Chemical Elements over the Surface of the Magnetic Ap Star Theta Aurigae. V. L. Khokhlova, J. B. Rice, and W. H. Wehlau. **307**, 768, 105-D1 (1986)
- WEISER, HEINZ. Analysis of Coronal H I Lyman-Alpha Measurements in

- a Polar Region of the Sun Observed in 1979. *George L. Withbroe, John L. Kohl, and Heinz Weiser*. **307**, 381, 99-C5 (1986)
- WENZ, MICHAEL. Optical Manifestations of Mass Outflows from Young Stars: An Atlas of CCD Images of Herbig-Haro Objects (Abstract of Paper in 1986 September Suppl.). *Karen M. Strom, Stephen E. Strom, Sidney C. Wolff, Jeff Morgan, and Michael Wenz*. **307**, 867, 106-E1 (1986)
- WESEMAEL, F. Carbon Pollution in Helium-rich White Dwarf Atmospheres: Time-dependent Calculations of the Dredge-Up Process. *C. Pelletier, G. Fontaine, F. Wesemael, G. Michaud, and G. Wegner*. **307**, 242, 97-F4 (1986)
- WEYMANN, RAY J. C IV Absorption Systems in QSO Spectra: Is the Character of Systems with $z_{\text{abs}} \equiv z_{\text{em}}$ Different from Those with $z_{\text{abs}} \ll z_{\text{em}}$? *Craig B. Foltz, Ray J. Weymann, Bradley M. Peterson, Light Sun, Matthew A. Malkan, and Federic H. Chaffee, Jr.* **307**, 504, 102-C1 (1986)
- WHANG, Y. C. Solar Wind Flow Upstream of the Coronal Slow Shock. *Y. C. Whang*. **307**, 838, 106-B9 (1986)
- WHITE, RICHARD E. Interstellar Lithium: Differential Depletion in Diffuse Clouds. *Richard E. White*. **307**, 777, 105-D10 (1986)
- WHITE, SIMON D. M. The Density Profiles of Tidally Stripped Galaxies. *Luis A. Aguilar and Simon D. M. White*. **307**, 97, 96-A9 (1986)
- WILSON, R. E. Close Binary Mass Anomalies and Metallicity. *W. Van Hamme and R. E. Wilson*. **307**, 151, 96-F6 (1986)
- WILSON, T. L. VLA Maps of Formaldehyde Absorption toward NGC 2024. *Richard M. Crutcher, C. Henkel, T. L. Wilson, K. J. Johnston, and J. H. Bieging*. **307**, 302, 98-C12 (1986)
- WINGLEE, R. M. The Electron-Cyclotron Maser Instability as a Source of Plasma Radiation. *R. M. Winglee and G. A. Dulk*. **307**, 808, 105-G2 (1986)
- WITHBROE, GEORGE L. Analysis of Coronal H I Lyman-Alpha Measurements in a Polar Region of the Sun Observed in 1979. *George L. Withbroe, John L. Kohl, and Heinz Weiser*. **307**, 381, 99-C5 (1986)
- WOLFF, SIDNEY C. Optical Manifestations of Mass Outflows from Young Stars: An Atlas of CCD Images of Herbig-Haro Objects (Abstract of Paper in 1986 September Suppl.). *Karen M. Strom, Stephen E. Strom, Sidney C. Wolff, Jeff Morgan, and Michael Wenz*. **307**, 867, 106-E1 (1986)
- WOLSZCZAN, A. A Cross-Correlation Analysis of Subpulse Drift in PSR 0809 + 74, PSR 1237 + 25 and PSR 1919 + 21. *M. Prószyński and A. Wolszczan*. **307**, 540, 102-G6 (1986)
- Multiple Imaging of Pulsars by Refraction in the Interstellar Medium. *J. M. Cordes and A. Wolszczan*. **307**, L27, 100-B13 (1986)
- WOOD, P. R. Hydrostatic Evolutionary Sequences for the Nuclei of Planetary Nebulae. *P. R. Wood and D. J. Faulkner*. **307**, 659, 104-B9 (1986)
- WOOSLEY, S. E. Nucleosynthesis in Neutron-rich Supernova Ejecta: Erratum. *D. Hartmann, S. E. Woosley, and M. F. El Eid*. **307**, 414, 99-E10 (1986) (Orig. paper in **297**, 837, 110-G1)
- The Evolution of Radiation-dominated Stars. I. Nonrotating Supermassive Stars. *G. M. Fuller, S. E. Woosley, and T. A. Weaver*. **307**, 675, 104-C11 (1986)
- WYNN-WILLIAMS, C. G. The 2 Micron Spectrum of NGC 6240: Evidence for More than a Starburst. *D. L. DePoy, E. E. Becklin, and C. G. Wynn-Williams*. **307**, 116, 96-C10 (1986)
- WYSE, ROSEMARY F. G. Self-regulated Cooling Flows in Elliptical Galaxies and in Cluster Cores: Is Exclusively Low Mass Star Formation Really Necessary? *Joseph Silk, S. Djorgovski, Rosemary F. G. Wyse, and Gustavo Bruzual A.* **307**, 415, 101-C1 (1986)
- YAHIL, AMOS. The Tidal Velocity Field in the Local Supercluster. *Per B. Lilje, Amos Yahil, and Bernard J. T. Jones*. **307**, 91, 96-A3 (1986)
- ZALCİK, MARK. Optical Flashes in Perseus. *Bill Katz, Dan Driscoll, Kai Millyard, Bruce Waters, Mark Zalcik, Joe Adair, Andreas Gada, Wayne Hayes, Richard Kelsch, Richard McWatters, Richard Rokosz, John Zehethofer, Alex Fullerton, Ron Lyons, and Marshall McCall*. **307**, L33, 100-C9 (1986)
- ZEHETHOFER, JOHN. Optical Flashes in Perseus. *Bill Katz, Dan Driscoll, Kai Millyard, Bruce Waters, Mark Zalcik, Joe Adair, Andreas Gada, Wayne Hayes, Richard Kelsch, Richard McWatters, Richard Rokosz, John Zehethofer, Alex Fullerton, Ron Lyons, and Marshall McCall*. **307**, L33, 100-C9 (1986)
- ZINK, L. R. Laboratory Measurement of the Rotational Spectrum of the OH Radical with Tunable Far-Infrared Radiation. *J. M. Brown, L. R. Zink, D. A. Jennings, K. M. Evenson, A. Hinz, and I. G. Nolt*. **307**, 410, 99-E6 (1986)
- ZMUIDZINAS, J. Observations of Neutral Atomic Carbon at 809 GHz. *J. Zmuidzinas, A. L. Betz, and D. M. Goldhaber*. **307**, L75, 107-D11 (1986)
- ZYLSTRA, G. Vela X-1 Pulse Timing. I. Determination of the Neutron Star Orbit. *P. E. Boynton, J. E. Deeter, F. K. Lamb, and G. Zylstra*. **307**, 545, 103-A1 (1986)

THE ASTROPHYSICAL JOURNAL
CONTENTS OF VOLUME 307, PART 1

1986 AUGUST 1, Number 1

	Page	Fiche
THE REDSHIFT-DISTANCE RELATION. IX. PERTURBATION OF THE VERY NEARBY VELOCITY FIELD BY THE MASS OF THE LOCAL GROUP Allan Sandage	1	95-A7
HIGH-FREQUENCY PERTURBATIONS AND GRAVITATIONAL COLLAPSE IN GRAVITY THEORY COUPLED WITH A HIGGS FIELD R. J. Slagter and G. G. A. Bäuerle	20	95-B12
DIFFRACTION IN GRAVITATIONAL LENSING FOR COMPACT OBJECTS OF LOW MASS Shuji Deguchi and William D. Watson	30	95-C8
HIGH EFFICIENCY OF THE PENROSE PROCESS OF ENERGY EXTRACTION FROM ROTATING BLACK HOLES IMMERSED IN ELECTROMAGNETIC FIELDS S. Parthasarathy, S. M. Wagh, S. V. Dhurandhar, and N. Dadhich	38	95-D2
BINARY COLLISION RATES OF RELATIVISTIC THERMAL PLASMAS. II. SPECTRA Charles D. Dermer	47	95-D11
FITTING FORMULAE FOR THE EQUATION OF STATE OF A PERFECT, SEMIRELATIVISTIC BOLTZMANN GAS A. T. Service	60	95-E10
MASS ENTRAINMENT IN ASTROPHYSICAL JETS David S. De Young	62	95-E12
OBSERVATIONAL CONSTRAINTS ON BENDING THE WIDE-ANGLE TAILED RADIO GALAXY 1919+479 Jack O. Burns, Christopher P. O'Dea, Stephen A. Gregory, and Thomas J. Balonek	73	95-F9
THE TIDAL VELOCITY FIELD IN THE LOCAL SUPERCLUSTER Per B. Lilje, Amos Yahil, and Bernard J. T. Jones	91	96-A3
THE DENSITY PROFILES OF TIDALLY STRIPPED GALAXIES Luis A. Aguilar and Simon D. M. White	97	96-A9
THE FAR-INFRARED AND OPTICAL STRUCTURE OF ARP 220 Marshall Joy, Daniel F. Lester, Paul M. Harvey, and Marian Frueh	110	96-B14
THE 2 MICRON SPECTRUM OF NGC 6240: EVIDENCE FOR MORE THAN A STARBURST D. L. DePoy, E. E. Becklin, and C. G. Wynn-Williams	116	96-C10
POPULATION STUDIES. III. FURTHER COMPARISON OF SPECTROSCOPICALLY AND KINEMATICALLY SELECTED HALO SAMPLES John Norris	123	96-D3
A UNIFIED N-BODY AND STATISTICAL TREATMENT OF STELLAR DYNAMICS. III. EARLY POSTCOLLAPSE EVOLUTION OF GLOBULAR CLUSTERS Stephen L. W. McMillan	126	96-D6
HIGH-PRECISION RADIAL VELOCITIES FOR FAINT GIANTS. I. MMT ECHELLE RESULTS FOR GLOBULAR CLUSTER STARS Ruth C. Peterson, Edward W. Olszewski, and Marc Aaronson	139	96-E5
HIGH-PRECISION RADIAL VELOCITIES FOR FAINT GIANTS. II. CALIBRATION OF THE MMT ECHELLETTE Ruth C. Peterson and Craig B. Foltz	143	96-E9
CLOSE BINARY MASS ANOMALIES AND METALLICITY W. Van Hamme and R. E. Wilson	151	96-F6
THE SPACE DENSITY OF CLASSICAL NOVAE Ronald A. Downes	170	97-A1
THE BIRTH OF NEUTRON STARS Adam Burrows and James M. Lattimer	178	97-A10
GAMMA-RAY BURST SIZE-FREQUENCY DISTRIBUTIONS: SPECTRAL AND TEMPORAL SELECTION EFFECTS J. C. Higdon and R. E. Lingenfelter	197	97-C1
BLOWUP OF FORCE-FREE MAGNETIC FIELDS IN THE INFINITE REGION OF SPACE B. C. Low	205	97-C9
THE NONRADIAL OSCILLATIONS OF EPSILON PERSEI. I. A LAWN-SPRINKLING SHOCK Myron A. Smith	213	97-D3
TURBULENT COMPRESSIBLE CONVECTION IN A DEEP ATMOSPHERE. III. TESTS ON THE VALIDITY AND LIMITATION OF THE NUMERICAL APPROACH Kwing L. Chan and S. Sofia	222	97-D12

	Page	Fiche
CARBON POLLUTION IN HELIUM-RICH WHITE DWARF ATMOSPHERES: TIME-DEPENDENT CALCULATIONS OF THE DREDGE-UP PROCESS <i>C. Pelletier, G. Fontaine, F. Wesemael, G. Michaud, and G. Wegner</i>	242	97-F4
ANALYSIS OF FOUR F SUBDWARFS USED AS SPECTROPHOTOMETRIC STANDARDS <i>R. A. Bell and J. B. Oke</i>	253	97-G1
ON THE POLARIZATION OF ALPHA ORIONIS <i>L. R. Doherty</i>	261	97-G9
HIGH-RESOLUTION X-RAY SPECTROSCOPIC EVIDENCE OF NONEQUILIBRIUM CONDITIONS IN THE CYGNUS LOOP <i>P. W. Vedder, C. R. Canizares, T. H. Markert, and A. K. Pradhan</i>	269	98-A3
THE H II REGION SURROUNDING LkH α 101 AND SMALL-SCALE STRUCTURE IN THE NEARBY ATOMIC HYDROGEN <i>P. E. Dewdney and R. S. Roger</i>	275	98-A9
AN ANALYSIS OF THE SHAPES OF ULTRAVIOLET EXTINCTION CURVES. I. THE 2175 Å BUMP <i>Edward L. Fitzpatrick and Derck Massa</i>	286	98-B9
THE INFRARED SPECTRUM OF M8 E: EVIDENCE FOR CIRCUMSTELLAR CO <i>Harold P. Larson, Reiner Hofmann, and Uwe Fink</i>	295	98-C3
VLA MAPS OF FORMALDEHYDE ABSORPTION TOWARD NGC 2024 <i>Richard M. Crutcher, C. Henkel, T. L. Wilson, K. J. Johnston, and J. H. Bieging</i>	302	98-C12
CO LINE FORMATION IN BIPOLAR FLOWS. I. ACCELERATED OUTFLOWS <i>Sylvie Cabrit and Claude Bertout</i>	313	98-D12
ON THE PRODUCTION OF ²⁶ Al BY WOLF-RAYET STARS: GALACTIC YIELD AND GAMMA-RAY LINE EMISSIVITY <i>Nikos Prantzos and Michel Cassé</i>	324	98-E14
DETECTION OF THE (3, 0) PHILLIPS BAND OF INTERSTELLAR C ₂ TOWARD ZETA OPHIUCHI <i>Ewine F. van Dishoeck and John H. Black</i>	332	98-F8
CANDIDATE SOLAR-TYPE PROTOSTARS IN NEARBY MOLECULAR CLOUD CORES <i>C. A. Beichman, P. C. Myers, J. P. Emerson, S. Harris, R. Mathieu, P. J. Benson, and R. E. Jennings</i>	337	98-F13
CLUMP 1: AN UNUSUAL MOLECULAR CLOUD COMPLEX NEAR THE GALACTIC CENTER <i>T. M. Bania, Antony A. Stark, and G. M. Heiligman</i>	350	98-G12
QUASI-STEADY MASS FLOWS IN CORONAL LOOPS <i>I. J. D. Craig and A. N. McClymont</i>	367	99-B6
ANALYSIS OF CORONAL H I LYMAN-ALPHA MEASUREMENTS IN A POLAR REGION OF THE SUN OBSERVED IN 1979 <i>George L. Withbroe, John L. Kohl, and Heinz Weiser</i>	381	99-C5
MERIDIONAL MOTIONS OF SUNSPOTS AND SUNSPOT GROUPS <i>Robert Howard and Peter A. Gilman</i>	389	99-C13
ON THE TIDAL INTERACTION BETWEEN PROTOPLANETS AND THE PRIMORDIAL SOLAR NEBULA. II. SELF-CONSISTENT NONLINEAR INTERACTION <i>D. N. C. Lin and John Papaloizou</i>	395	99-D5
LABORATORY MEASUREMENT OF THE ROTATIONAL SPECTRUM OF THE OH RADICAL WITH TUNABLE FAR-INFRARED RADIATION <i>J. M. Brown, L. R. Zink, D. A. Jennings, K. M. Evenson, A. Hinz, and I. G. Nolt</i>	410	99-E6
ERRATA		
OSCILLATOR STRENGTHS OF THE CN RED SYSTEM <i>Sumner P. Davis, Dan Shortenhaus, Glenn Stark, Rolf Engleman, Jr., John G. Phillips, and Robert P. Hubbard</i>	414	99-E10
NUCLEOSYNTHESIS IN NEUTRON-RICH SUPERNOVA EJECTA <i>D. Hartmann, S. E. Woosley, and M. F. El Eid</i>	414	99-E10
INSTRUCTIONS TO AUTHORS	i	99-E11

1986 AUGUST 15, Number 2

SELF-REGULATED COOLING FLOWS IN ELLIPTICAL GALAXIES AND IN CLUSTER CORES: IS EXCLUSIVELY LOW MASS STAR FORMATION REALLY NECESSARY? <i>Joseph Silk, S. Djorgovski, Rosemary F. G. Wyse, and Gustavo Bruzual A.</i>	415	101-C1
ARE COMPACT GROUPS OF GALAXIES PHYSICALLY DENSE? <i>Gary A. Mamon</i>	426	101-C12
THEORETICAL MODELS FOR H II REGIONS. II. THE EXTRAGALACTIC H II REGION ABUNDANCE SEQUENCE <i>M. A. Dopita and I. N. Evans</i>	431	101-D3
SECONDARY METALLICITY IN ANALYTIC MODELS OF CHEMICAL EVOLUTION OF GALAXIES <i>Donald D. Clayton and Irini Pantelaki</i>	441	101-D13

CONTENTS

v

	Page	Fiche
WHAT WARPED DISKS CAN TELL US ABOUT GALAXY HALOS AND GRAVITY <i>Dimitris M. Christodoulou and Joel E. Tohline</i>	449	101-E7
DISTRIBUTION AND KINEMATICS OF NEUTRAL HYDROGEN IN THE BARRED SPIRAL GALAXY NGC 3359 <i>Roger Ball</i>	453	101-E11
THE STRUCTURE OF COMPACT DOUBLE RADIO SOURCES: 610 MHz VLBI OBSERVATIONS OF 1518+047 AND 2050+364 <i>R. L. Mutel and M. W. Hodges</i>	472	101-G3
DUST IN THE EMISSION-LINE GAS OF THE SEYFERT 2 GALAXY MARKARIAN 3 <i>S. B. Kraemer and J. Patrick Harrington</i>	478	102-A1
SIMULTANEOUS EXOSAT AND IUE OBSERVATIONS OF FAIRALL 9: SHORT AND LONG TERM VARIABILITY <i>M. Morini, L. Scarsi, D. Molteni, M. Salvati, G. C. Perola, L. Piro, G. Simari, A. Boksenberg, M. V. Penston, M. A. J. Snijders, G. E. Bromage, J. Clavel, A. Elvius, and M. H. Ulrich</i>	486	102-A10
NEW X-RAY AND OPTICAL OBSERVATIONS OF THE X-RAY DISCOVERED QSO-GALAXY PAIR 1E 0104.2+3153 <i>Isabella M. Gioia, T. Maccacaro, R. E. Schild, P. Giommi, and J. T. Stocke</i>	497	102-B8
C IV ABSORPTION SYSTEMS IN QSO SPECTRA: IS THE CHARACTER OF SYSTEMS WITH $z_{\text{abs}} \approx z_{\text{em}}$ DIFFERENT FROM THOSE WITH $z_{\text{abs}} \ll z_{\text{em}}$? <i>Craig B. Foltz, Ray J. Weymann, Bradley M. Peterson, Light Sun, Matthew A. Malkan, and Frederic H. Chaffee, Jr.</i>	504	102-C1
THE EVOLUTION OF RADIO PULSARS <i>B. N. Candy and D. G. Blair</i>	535	102-G1
A CROSS-CORRELATION ANALYSIS OF SUBPULSE DRIFT IN PSR 0809+74, PSR 1237+25, AND PSR 1919+21 <i>M. Prószyński and A. Wolszczan</i>	540	102-G6
VELA X-1 PULSE TIMING. I. DETERMINATION OF THE NEUTRON STAR ORBIT <i>P. E. Boynton, J. E. Deeter, F. K. Lamb, and G. Zylstra</i>	545	103-A1
REFRACTIVE INTERSTELLAR SCINTILLATION OF RADIO SOURCES <i>B. J. Rickett</i>	564	103-B6
RELATIVISTIC STELLAR DYNAMICS ON THE COMPUTER. IV. COLLAPSE OF A STAR CLUSTER TO A BLACK HOLE <i>Stuart L. Shapiro and Saul A. Teukolsky</i>	575	103-C3
FOURIER ANALYSIS OF THE LIGHT CURVES OF THE RR LYRAE STARS IN THE GLOBULAR CLUSTERS M15, NGC 6171, AND NGC 6723 <i>G. Kovács, I. Shlosman, and J. R. Buchler</i>	593	103-D7
THE TRAPEZIUM CLUSTER OF THE ORION NEBULA <i>G. H. Herbig and D. M. Terndrup</i>	609	103-E10
CARBON COMBUSTION SUPERNOVAE: NUMERICAL STUDIES OF THE FINAL EVOLUTION OF DEGENERATE CARBON-OXYGEN CORES <i>Ewald Müller and W. David Arnett</i>	619	103-F8
R CORONAE BOREALIS STARS AND PLANETARY NEBULAE <i>Bradley E. Schaefer</i>	644	104-A9
THE H α VELOCITY FIELD OF THE OMEGA NEBULA (M17) <i>Gilles Joncas and Jean-René Roy</i>	649	104-A12
HYDROSTATIC EVOLUTIONARY SEQUENCES FOR THE NUCLEI OF PLANETARY NEBULAE <i>P. R. Wood and D. J. Faulkner</i>	659	104-B9
THE EVOLUTION OF RADIATION-DOMINATED STARS. I. NONROTATING SUPERMASSIVE STARS <i>G. M. Fuller, S. E. Woosley, and T. A. Weaver</i>	675	104-C11
THE $^{14}\text{N}(\text{e}^-, \nu)^{14}\text{C}(\alpha, \gamma)^{18}\text{O}$ REACTION AND HELIUM FLASHES IN ACCRETING HELIUM WHITE DWARFS <i>Masa-aki Hashimoto, Ken'ichi Nomoto, Kenzo Arai, and Keisuke Kaminisi</i>	687	104-D9
A MODEL ATMOSPHERE ANALYSIS OF THE FAINT EARLY-TYPE HALO STAR PHL 346 <i>F. P. Keenan, D. J. Lennon, P. J. F. Brown, and P. L. Dufton</i>	694	104-E2
SPECTRAL VARIABILITY OF CYGNUS X-2: STRUCTURE IN THE CIRCUMSOURCE MATERIAL <i>S. D. Vrilek, S. M. Kahn, J. E. Grindlay, D. J. Helfand, and F. D. Seward</i>	698	104-E9
AN IRAS SURVEY OF IR EXCESSES IN G-TYPE STARS <i>Sten F. Odenwald</i>	711	104-F6
OPTICAL STUDIES OF CASSIOPEIA A. VIII. SEARCH FOR A STELLAR REMNANT <i>Sidney van den Bergh and Christopher J. Pritchett</i>	723	104-G7
SUPERNOVA COLORS AND SYSTEMATIC FLUX DILUTION <i>Albert J. Fu and W. David Arnett</i>	726	105-A1
THE MAIN-SEQUENCE COLOR-MAGNITUDE DIAGRAM OF M92 <i>J. N. Heasley and Carol A. Christian</i>	738	105-A13

	Page	Fiche
STRONG CYANOGEN STARS: THE RESULT OF BINARY COALESCENCE? Bruce Campbell	750	105-B11
A SPECTROPHOTOMETRIC STUDY AND MASS DETERMINATION FOR THE CATAclysmic VARIABLE LANNING 10 E. M. Schlegel, R. K. Honeycutt, and R. H. Kaitchuk	760	105-C7
DISTRIBUTION OF CHEMICAL ELEMENTS OVER THE SURFACE OF THE MAGNETIC Ap STAR THETA AURIGAE V. L. Khokhlova, J. B. Rice, and W. H. Wehlau	768	105-D1
INTERSTELLAR LITHIUM: DIFFERENTIAL DEPLETION IN DIFFUSE CLOUDS Richard E. White	777	105-D10
AMMONIA OBSERVATIONS OF REGIONS WITH MOLECULAR OUTFLOWS José M. Torrelles, Paul T. P. Ho, James M. Moran, Luis F. Rodríguez, and Jorge Cantó	787	105-E9
RADIATIVE LIFETIMES OF B AND C $^1\Sigma^+$ STATES OF CO E. Krishnakumar and S. K. Srivastava	795	105-F3
THE EFFECTS OF ELECTROSTATIC CHARGING ON THE DUST DISTRIBUTION AT HALLEY'S COMET M. Horanyi and D. A. Mendis	800	105-F8
THE ELECTRON-CYCLOTRON MASER INSTABILITY AS A SOURCE OF PLASMA RADIATION R. M. Winglee and G. A. Dulk	808	105-G2
THE ENERGY BALANCE OF PLASMOIDS IN THE SOLAR ATMOSPHERE P. J. Cargill and G. W. Pneuman	820	106-A1
RESPONSE OF AN EMERGING FLUX TUBE TO A CURRENT-DRIVEN INSTABILITY Judith T. Karpen and Jay P. Boris	826	106-A7
SOLAR WIND FLOW UPSTREAM OF THE CORONAL SLOW SHOCK Y. C. Whang	838	106-B9
A COMMENT ON THE $^7\text{Be}(\rho, \gamma)^8\text{B}$ CROSS SECTION AND THE SOLAR NEUTRINO PROBLEM F. C. Barker and R. H. Spear	847	106-C3
CHEMICAL MODELS OF THE DEEP ATMOSPHERE OF URANUS Bruce Fegley, Jr., and Ronald G. Prinn	852	106-C8
ABSTRACTS OF ASTROPHYSICAL JOURNAL SUPPLEMENT SERIES, 1986 SEPTEMBER ISSUE		
THEORY OF AXISYMMETRIC MAGNETOHYDRODYNAMIC FLOWS: DISKS R. V. E. Lovelace, C. Mehanian, C. M. Mobarry, and M. E. Sulkanen	867	106-E1
OPTICAL MANIFESTATIONS OF MASS OUTFLOWS FROM YOUNG STARS: AN ATLAS OF CCD IMAGES OF HERBIG-HARO OBJECTS Karen M. Strom, Stephen E. Strom, Sidney C. Wolff, Jeff Morgan, and Michael Wenz	867	106-E1
A COMPARISON OF RECENT NUMERICAL CALCULATIONS OF STELLAR CORE COLLAPSE Stephen W. Bruenn	868	106-E2
JPL PULSAR TIMING OBSERVATIONS. IV. EXCESS PHASE NOISE G. S. Downs and J. Krause-Polstorff	869	106-E3
COMPREHENSIVE MODELS OF DIFFUSE INTERSTELLAR CLOUDS: PHYSICAL CONDITIONS AND MOLECULAR ABUNDANCES Ewine F. van Dishoeck and John H. Black	869	106-E3
E. W. FICK OBSERVATORY STELLAR RADIAL VELOCITY MEASUREMENTS. I. 1976-1984 W. I. Beavers and J. J. Eitter	870	106-E4
SPECTRA OF PLAGES ON THE SUN AND STARS. I. Ca II H AND K LINES B. J. LaBonte	870	106-E4
SPECTRA OF PLAGES ON THE SUN AND STARS. II. THE H I H α LINE B. J. LaBonte	870	106-E4
INDEX TO VOLUME 307, PARTS 1 AND 2 i		101-B1

THE ASTROPHYSICAL JOURNAL LETTERS TO THE EDITOR

CONTENTS OF VOLUME 307, PART 2

1986 August 1, Number 1

	Page	Fiche
A MEASUREMENT OF THE MASS DENSITY OF THE UNIVERSE Edwin D. Loh and Earl J. Spillar	L1	100-A4
CIRCULAR POLARIZATION IN T TAURI STARS Raymond Nadeau and Pierre Bastien	L5	100-A8
ON THE ABSOLUTE MAGNITUDES OF RR LYRAE STARS Thomas G. Barnes III and Suzanne L. Hawley	L9	100-A12
CARBON STARS WITH SILICATE DUST IN THEIR CIRCUMSTELLAR SHELLS Irene R. Little-Marenin	L15	100-B3
OPTICAL SPECTROSCOPY OF HH-EXCITING STARS FROM SCATTERED LIGHT CONTINUA Martin Cohen, Michael A. Dopita, and Richard D. Schwartz	L21	100-B8
MULTIPLE IMAGING OF PULSARS BY REFRACTION IN THE INTERSTELLAR MEDIUM J. M. Cordes and A. Wolszczan	L27	100-B13
OPTICAL FLASHES IN PERSEUS Bill Katz, Dan Driscoll, Kai Millyard, Bruce Waters, Mark Zalcik, Joe Adair, Andreas Gada, Wayne Hayes, Richard Kelsch, Richard McWatters, Richard Rokosz, John Zehethofer, Alex Fullerton, Ron Lyons, and Marshall McCall	L33	100-C9

1986 August 15, Number 2

CLOUD COLLISIONAL DAMPING OF SPIRAL DENSITY WAVES IN GALAXIES Stephen H. Lubow	L39	107-B1
PULSED VERY HIGH ENERGY GAMMA RAYS FROM THE COS B SOURCE 2CG 006-00 B. C. Raubenheimer, A. R. North, O. C. De Jager, G. van Urk, and D. J. van Tonder	L43	107-B5
MASS FUNCTIONS FOR GLOBULAR CLUSTER MAIN SEQUENCES BASED ON CCD PHOTOMETRY AND STELLAR MODELS Robert D. McClure, Don A. Vandenberg, Graeme H. Smith, Gregory G. Fahlman, Harvey B. Richer, James E. Hesser, William E. Harris, Peter B. Stetson, and R. A. Bell	L49	107-B10
ON THE DIVIDING LINE FOR STELLAR CORONAE Spiro K. Antiochos, Bernhard M. Haisch, and Robert A. Stern	L55	107-C1
CAN BINARY STARS TEST SOLAR MODELS? Daniel M. Popper and Roger K. Ulrich	L61	107-C6
EXTENDED FAR-INFRARED EMISSION ASSOCIATED WITH MASS OUTFLOWS FROM YOUNG STARS: L1551 IRS 5 S. Edwards, S. E. Strom, R. L. Snell, T. H. Jarrett, C. A. Beichman, and K. M. Strom	L65	107-C10
THE C ₃ H ₂ 2 ₂₀ -2 ₁₁ TRANSITION: ABSORPTION IN COLD DARK CLOUDS H. E. Matthews, S. C. Madden, L. W. Avery, and W. M. Irvine	L69	107-D6
OBSERVATIONS OF NEUTRAL ATOMIC CARBON AT 809 GHz J. Zmuidzinas, A. L. Betz, and D. M. Goldhaber	L75	107-D11